What Heavy Loads Do To Rail... p. 16

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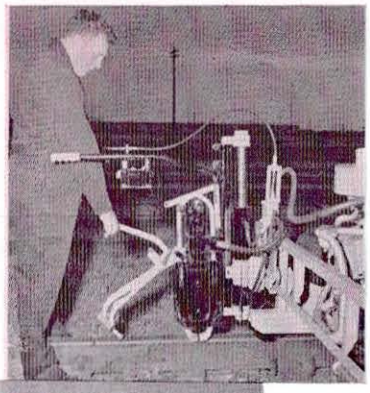
March 6, 1961

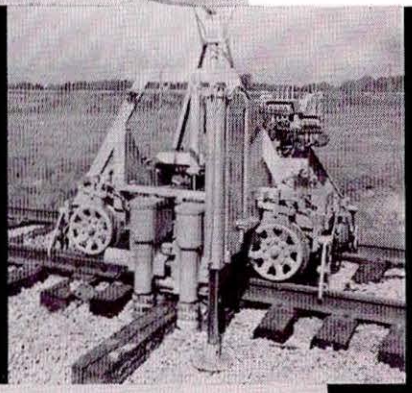
RAILWAY AGE *weekly*



Spike Driver

Snow Cleaner

Spotlight on AREA



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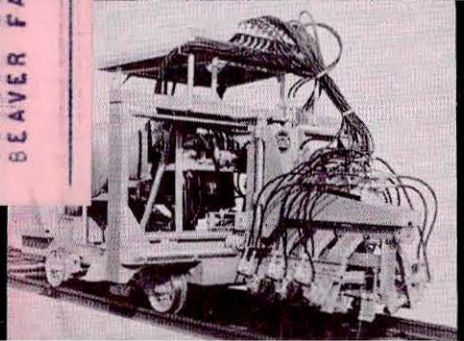

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Present fast schedules maintained with fewer units

New higher speed schedules obtained without increasing normal consist

Lower motive-power operating costs

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Greater horsepower, on four axles . . . a locomotive of simple design, reliable and economical to operate . . . a locomotive specifically designed for profitable high-speed freight service on American railroads . . . this is what the railroad industry asked for eight years ago, when they helped General Electric plan a new locomotive concept. The U25B is that locomotive.

For further information about the new U25B, contact your General Electric Sales Office or General Electric Co., 2901 East Lake Road, Erie, Pennsylvania.

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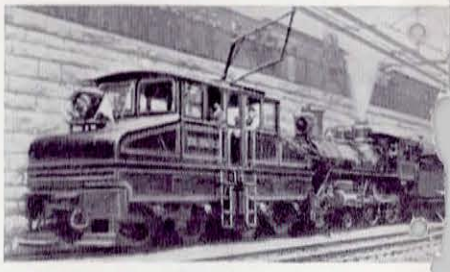
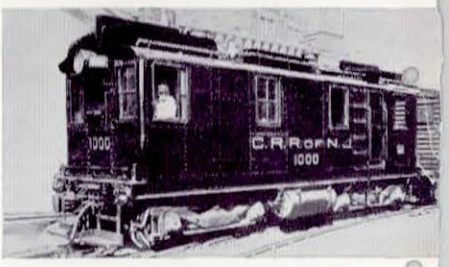


1895 First Mainline Electric Locomotive

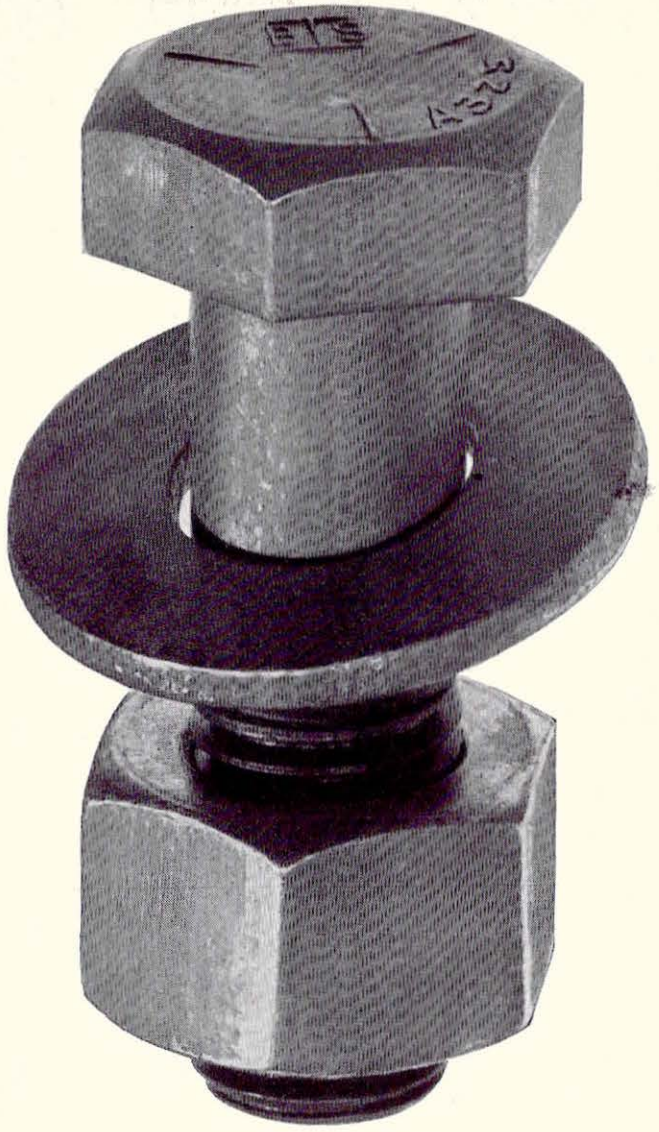


1924 First Diesel-Electric Locomotive

1956 Universal Diesel-Electric Export Locomotive

1957 Rectifier-type Freight Locomotive

1958 8500-hp Gas Turbine-Electric Locomotive



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Bethlehem stocks the new high-strength bolts for structural steel joints (large head, short thread) in all popular sizes—⅝ to 1⅛-in. diameters, inclusive, in usual lengths, available now. Available soon—1¼-in. diameter, in usual lengths.

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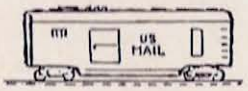
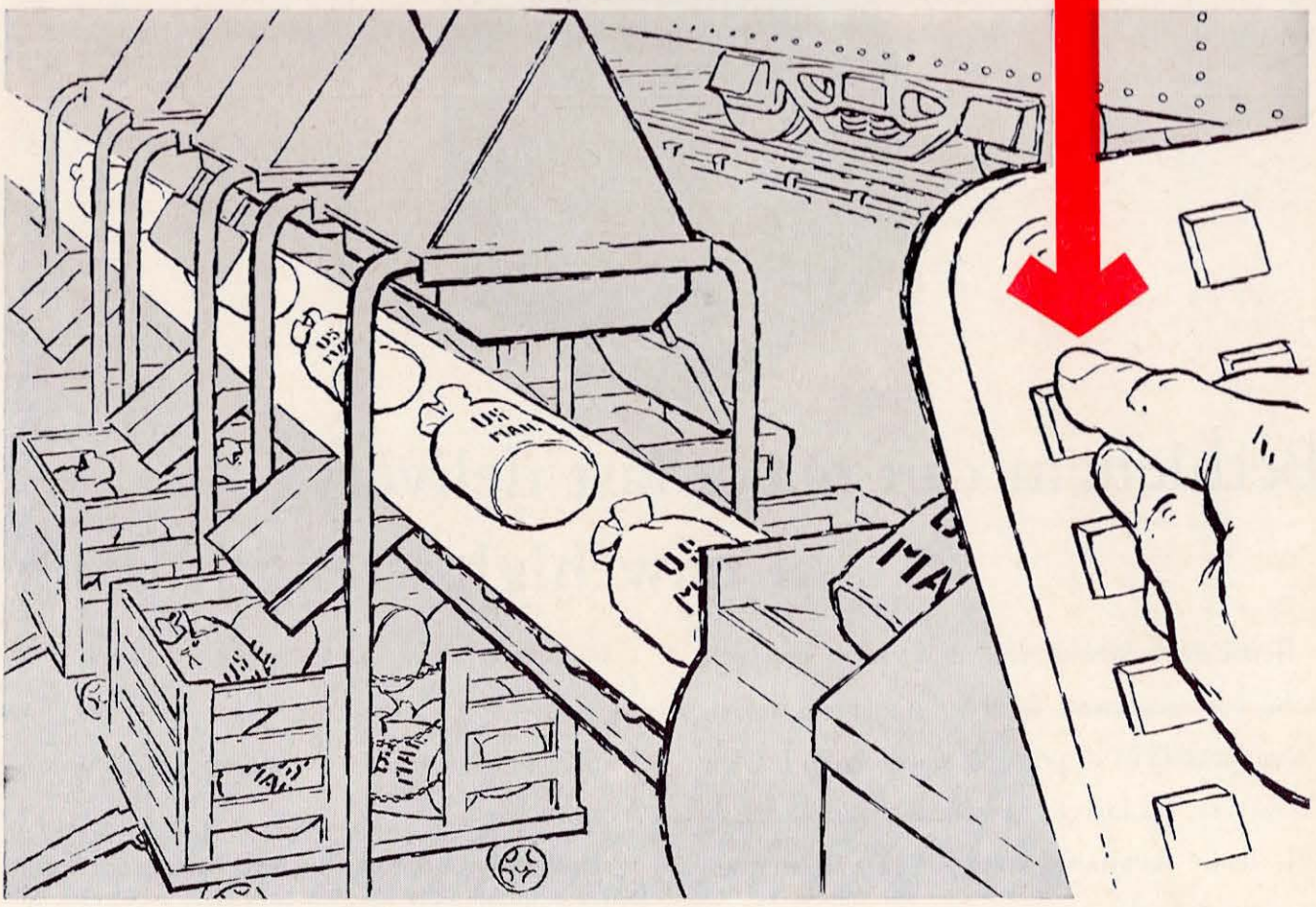


By carefully integrating machines, electronics, and human dynamics, Aerojet-General has developed a unique system which automatically guides mail sacks to their proper destinations. The old method of manually sorting, stacking, and hauling is eliminated with the installation of an Aerojet Sack Sorting System.

This sorting system • **Lowers mail handling cost by one-half or more • Pays for itself in 2 years or less • Handles sacks and/or parcels • Accelerates mail**



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The 'brain' of the sorter is an electro-mechanical memory device that directs each sack to its destination.

ATLANTIC DIVISION
Aerojet-General® CORPORATION
Frederick, Maryland

THE GENERAL TIRE
A SUBSIDIARY OF THE GENERAL TIRE AND RUBBER COMPANY

RAILWAY AGE *weekly* March 6, 1961 • Vol. 150, No. 10

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ICC condemns guaranteed rates ..... p. 9

In throwing out a New York Central contract rate on rugs and carpets, the Commission ruled that such rates "constitute a destructive competitive practice." Two dissenting commissioners protested that the ICC, having called on railroads to overhaul their rates, should now permit "experimentation within legal limits."

M/W panel looks at TOFC p.13

The problems piggyback creates for maintenance departments—and some of the solutions that have evolved—were described at the February meeting of New York's Metropolitan Maintenance of Way Club.

'The fireman's job no longer exists' p.14

That's what the Presidential Railroad Commission was told last week by management witnesses, who also contended that the continued employment of unneeded fireman is impeding technological progress.

Cover Story—What heavy loads do to rail p.16

The steady increase in freight-car capacity means that rail is being pounded more than ever before. Rail, therefore, is subject to severe shelling, head checks and corrugations, especially on sharp curves. G.M. Magee, director engineering research, AAR—in an article written exclusively for Railway Age—points the way to a possible solution.

Milwaukee faction threatens proxy fight p.40

One group of Milwaukee directors isn't satisfied with the stock exchange plan that reportedly would be involved in a Milwaukee-C&NW merger. It would amount to a "shotgun marriage," they assert, and they promise to oppose it with a proxy fight, if necessary.

The Action Page: 90-1 odds are too big p.46

In 1959, federal outlays for railroad competitors were over 90 times more than railroads invested in roadway and

Spotlight on AREA

New product ideas for the engineer p.28

Program highlights of the Chicago meeting p.34

greater holding power

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Week at a Glance CONT

Current Statistics

Operating revenues	
12 mos., 1960	$9,514,294,066
12 mos., 1959	9,825,060,206
Operating expenses	
12 mos., 1960	7,565,318,548
12 mos., 1959	7,704,815,319
Taxes	
12 mos., 1960	998,799,249
12 mos. 1959	1,047,537,411
Net railway operating income	
12 mos., 1960	584,033,571
12 mos., 1959	747,773,934
Net income estimated	
12 mos., 1960	445,000,000
12 mos., 1959	578,000,000
Carloadings revenue freight	
7 wks., 1961	3,408,166
7 wks., 1960	4,124,426
Freight cars on order	
Feb. 1, 1961	18,894
Feb. 1, 1960	48,170
Freight cars delivered	
1 mo., 1961	3,515
1 mo., 1960	2,849

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structures. There is nothing wrong with railroads that would not be quickly corrected if knowledgeable people, in authority, made the right moves.

Short and Significant

A general business upturn . . .

could follow "the usual seasonal upturn, which should begin in the latter part of March," says a cautious prediction by C&O's "Financial Weather Bureau." C&O, first road to report on February traffic, said last month's performance indicated "a continued leveling out" of the recession.

Net income of Class I railroads in 1960 . . .

is now officially estimated at $445 million—compared with 1959's $578 million and 1958's $603 million. Rate of return last year averaged 2.13%. Twenty-seven Class I roads failed to earn their fixed charges in 1960—19 in the Eastern District, five in the Southern Region, and three in the Western District.

Southern control of the Interstate Railroad . . .

through stock ownership has been approved by the ICC. The Commission turned down L&N's petition for inclusion in the transaction. Interstate is an 87-mile coal road in western Virginia. (RA, June 1, 1959, p. 7.)

Loan guaranty provisions . . .

of the Interstate Commerce Act, now scheduled to expire March 31, would be kept alive by proposed legislation which is supported by the ICC and the railroad industry. The proposed legislation calls for a one-year extension. The ICC and AAR favor a two-year extension and some liberalizing amendments.

Direct federal loans to railroads . . .

were suggested by ICC Chairman Hutchinson, who also proposed that railroads be permitted to repay loans over a 25-year rather than a 15-year period. The AAR proposed that the guaranteed-loan program be extended to cover REA Express.

New reduced fares for group travel . . .

went into effect on the CN and the CPR March 1. The two roads described the plan as an experiment "to determine the effect of low fares on the travel market, to attract to the railways budget-conscious travelers and to stimulate off-season railway travel."

Vol. 4, No. 1

Railway Executive News

Published by Railroad Products Division, SERVO CORPORATION OF AMERICA

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111 New South Road • Hicksville, Long Island, New York

SERVOSAFE® Hot Box Detective* here signals train crew automatically, if overheated journal bearing is detected on passing freight at remote spot on main line.

Automatic Alarm Patent Issued to Servo Corp.

Patent no. 2,963,575 covering automatic alarm hot box detection devices was issued Dec. 6, 1960 to Servo Corporation of America by the United States Patent Office.

The new patent covers a variety of computation and comparison methods for ascertaining and identifying hot box signals emerging at the output end of the detection devices.

Granting of this latest patent now protects with *three* patents various infrared detection systems pioneered and marketed by Servo Corp.'s Railroad Products Division.

The automatic alarm, according to Servo railroad spokesmen, represents one of the most significant developments in hot box detection since Servo marketed the first successful SERVOSAFE® Hot Box Detective* system in 1956.

This important railroad safety device, known commercially as SERVOLARM® equipment, has been incorporated in various Detective installations for several years.

It allows Detective systems to be used for automatically setting signals to stop trains with hot boxes and gives the railroads a broader choice of systems employing standard chart recording interpretation techniques or automatic control, depending on detector location and individual railroad requirements. ■

*Protected under one or more of the following U.S. Patent Nos.: 2,880,309, 2,947,857, and 2,963,575. Other U.S. and foreign patents pending.

FASTER FREIGHTS:

Railroads Straighten Track, Reduce Stops, Add Detectors to Speed Up Service...

"In the rugged mountains of northern Arizona, Atchison-Topeka & Santa Fe Railway workers are hurriedly laying the final sections of a new 44-mile strip of track that will slice through this region, unwinding sharp curves, and flattening steep grades.

"Farther north, Chicago & North West Railway freights now roll non-stop through fifty small towns between Chicago and Rapid City, S. D.

"To the east, Chesapeake & Ohio Railroad crews plant small metal boxes containing super-sensitive infrared heat detecting systems in roadbeds along sections of the line's track. The aim is to spot 'hot boxes'—overheated wheel bearings—before they cause time-consuming breakdowns.

"These seemingly unrelated events, separated by hundreds of miles, are aimed at a single objective: a further speedup of rail freight. Taking kinks out of winding track, scheduling fewer stops, and installing better equipment are three of the major methods the nation's railroads are using to achieve faster freights."

* * *

"The Chesapeake & Ohio and other railroads have eased the problem of delays caused by hot boxes by installing the special infrared hot box detection systems along sections of track. These devices, which sense the heat generated by a hot box, flash the danger signal to the nearest terminal, which relays the message by radio to the train's engineer.

"Thus, before serious trouble results, the engineer can stop the train or slow it down and avoid the even greater delay caused by a broken axle or fire. The C&O has 17 of the devices in service and plans to add another dozen in the near future."

THE WALL STREET JOURNAL
Dec. 16, 1960

The Atchison-Topeka & Santa Fe and Chesapeake & Ohio are two of the 28 major Class I railroads across the country that have adopted the patented infrared SERVOSAFE® Hot Box Detective* system for spotting dangerously overheated journal bearings on fast freights.

First railroad to install the Detective back in 1956, the C&O has found that even smokeless hot boxes on trains traveling at high speed cannot escape spotting by SERVOSAFE.

"I consider the Hot Box Detective to be one of the greatest aids to railroading in many, many years," C&O Vice President for Operations M. I. Dunn has stated. "Our tests have proved it 100 per cent effective."** ■

**CHESAPEAKE & OHIO RAILROAD
1958 Annual Report

RAILROADS REPORT:

Spot 20 hot boxes at one spot alone...

Writing in the *L&N Magazine* (Dec. 1960) on the railroad's experience with its SERVOSAFE® Hot Box Detectives*, Edison H. Thomas states: *"...just how effective the system is can be judged by the fact that the automatic (Detective system) at Cullman (Ala.) alone has spotted 20 incipient hot boxes, any one of which could well have caused a derailment had it not been discovered and corrective measures taken."*

Efficiency as high as 100%...

Railroads using the SERVOSAFE Hot Box Detective report better than 90 per cent efficiency for the units...in some cases as high as 100 per cent for consecutive periods of six months or over.

Savings over $100,000...

One SERVOSAFE road reports savings of over $100,000 per installation per year, allowing amortization of the equipment in approximately one month's time.

'Wheel Checker' Sales Now Handled by Servo

Servo's Railroad Products Division has been granted exclusive worldwide sales rights for the *Wheel Checker*, a division spokesman announced.

System automatically detects broken wheel flanges and loose wheels on passing cars, squirting a shot of non-drying bright yellow paint on the wheel for quick identification. ■

ICC Condemns Guaranteed Rates

► **The Story at a Glance: Guaranteed rates or contract rates have been condemned by the ICC as "unjust and unreasonable" because they "constitute a destructive competitive practice within the meaning of the national transportation policy." The condemnation came in a report and order (in I&S No. 7250) which requires the New York Central to cancel by March 28 the guaranteed rate which it has maintained since April 29, 1960, for shipments of rugs and carpets between Amsterdam, N. Y., and Chicago.**

Commissioner Freas dissented and Commissioner Herring subscribed to his statement. They disagreed with the majority finding that the guaranteed rate in issue is illegal and asserted that the Commission, having exhorted the railroads to reappraise their pricing practices, should now "allow experimentation within legal limits."

Condemning the New York Central's guaranteed rate, the ICC brushed aside all of Central's supporting arguments which included contentions that the railroads have a right to compete on the basis of their cost advantages, and to offer consistent users of their facilities lower prices than shippers who use them on a stand-by basis. No shipper complained, the only protestants having been truckers and water carriers.

The guaranteed rate is $1.55 per 100 lb, carload minimum 30,000 lb, and $1.25 per 100 lb for the excess above 30,000 lb which is loaded in the same car. It is available to shippers who sign one-year agreements to ship 80% of their Amsterdam-Chicago carpet business by NYC.

If this requirement is not met, the regular rates are assessed. They are $1.85 per 100 lb, minimum 24,000 lb, and $1.48 per 100 lb for the excess above 24,000 lb. Truck rates are also $1.85, minimum 24,000 lb.

While open to all shippers in a position to comply with the tariff, the guaranteed rate was published principally to get the business of an Amsterdam carpet manufacturer whose annual shipments from there to Chicago amount to about 6,000,000 lb. Central got only 20% of this business—47 carloads—in 1959.

As to all carpet traffic moving out of Amsterdam, Central's losses were also indicated by figures in the record. It got 913 carloads of the rug manufacturer's traffic in the year 1955, but only 159 in 1958.

The Commission's condemnation of the guaranteed rate was a broad one under the Interstate Commerce Act's Section 1. It was based entirely on the act's declaration of national transportation policy.

The Commission thus avoided getting into allegations that the guaranteed rate is unjustly discriminatory and unduly

ICC's Moral Duty—An Editorial

It has been this paper's belief all along that the ICC—being as well-informed of conditions in transportation as any group, public or private, in the country—has the moral duty to go as far as the letter of the law will permit in promoting healthy economic conditions in the transportation industry, or at least, in allowing regulated carriers to try to achieve such health for themselves.

The ICC knows that a large part of the railroad industry is in precarious condition. If some other types of for-hire transportation are, for the moment, not unduly prosperous either—the ICC is nevertheless fully aware that, in any event, the business of these other agencies is growing, not declining. It also knows that when a railroad is withdrawn from service, it stays withdrawn—while the disappearance of a barge line or truck line does not foreclose future barge or truck service (since the highways and improved rivers do not disappear).

Under these circumstances, the ICC, as we see it, has no moral right to deny railroads a reasonable opportunity to attract badly needed traffic—by any ethical means, not specifically forbidden by law.

The ICC certainly must know that railways in practically all other well-developed countries (e.g., Canada, Britain, France) are permitted to use the device known as "agreed charges," to help them attract traffic which they can handle economically. It knows, also, that this device has been successful in achieving this objective in these other countries, and that it has been well received by shippers and receivers. Economically and ethically, then, there is every reason for permitting the introduction of this method of pricing railway service into the U.S.—*at least experimentally*. The New York Central's agreed rates might not be the perfect answer to the problem, but has the ICC the certain knowledge that it is not?

It follows that the only possible excuse the ICC majority could have for requiring the New York Central to withdraw its contract rates would be its discovery of provisions in the statutes specifically forbidding the practice. If, as it appears, the majority believes it has found such prohibitions, then—in the light of conditions cited above—it should feel morally obliged to urge the Congress to repeal these prohibitions.

A couple of dissenting commissioners show that they have a clear understanding of the issues in this case, and how they should be resolved. A couple of those concurring separately show their consciences are troubled—as well they may be. Unless railroads are regulated less restrictively in the future than they have been in the past, a lot of them will wind up in bankruptcy and government ownership.

European railwaymen come over here all the time and tell us that, anyhow, there is one advantage to government operation—it gets rid of the regulators. In our belief, the ICC—in the evident failure of the majority to sense the urgency of the present situation of the railroads—may be digging away at its own grave.

prejudicial and preferential in violation of Sections 2 and 3, and unlawful under the Elkins Act's prohibitions against rebates and concessions. Concern about the prospective impact on the rate structure seemed uppermost in the minds of the majority, though Commissioner Freas reminded them that there was no showing that the rate structure has been the best possible one.

Nevertheless, the majority distinguished the case from those in which it has approved volume rates, multiple-car rates and other incentive arrangements. The report said:

"In none of these proceedings did it appear that the approved rates would have a destructive effect upon other rates. The situation here differs. The respondent concedes that if these rates are approved it will extend contract rates to other points and other commodities, and the motor carriers flatly state that they will follow. If this occurred between points on the lines of the respondent and the competing motor carriers, it could be expected to spread to other railroads and motor carriers, and eventually to encompass much or most of the traffic of the country.

"The end result, in our judgment, would be the destruction in large measure of what is in general a just, reasonable, and lawful rate structure necessary to maintain an adequate national transportation system. Such a destructive effect upon the general rate structure may not be countenanced without strong and compelling reasons, which are absent here."

Such fears had been discounted by NYC's general solicitor, R. D. Brooks, when he argued the case before the Commission. If the guaranteed rate didn't work, he said, it could be abandoned and the normal rate structure would not have been hurt. He emphasized that the guaranteed rate does not distinguish between large and small shippers. The only distinction it makes is between the stand-by shipper and the consistent shipper.

The Commission noted the latter and Central's reliance on the sale of commutation passenger tickets as a precedent. "Such tickets," it said, "are based on the principle of mass transportation. The proposed rates are not dependent upon the tender of any specific volume (as opposed to percentage) of traffic. Moreover, commutation tickets are specifically authorized in Section 22(1). . . . The existence of commutation passenger tickets affords no legal basis for the contract rates on property here under investigation."

Also, the Commission noted that agreed charges in Canada, which are similar to guaranteed rates, were authorized by special legislation.

The report went on to list conditions under any of which "the assessment of different charges for the same haul between the same points may be justified." They are: (1) where the total charge reflects a lower cost of performing the service on one shipment than on another for which the higher charge applies; (2) where the total transportation services rendered the shipments are different; (3) where in other respects the circumstances directly affecting the transportation of the respective shipments differ materially. The Commission found no such conditions in the present case, and it proceeded to call the 80% requirement "arbitrary."

"So far as this record indicates," it continued, "there is no rational basis for affording an 80% user a 13% reduction in the normal rates on a 40,000-lb shipment while denying the reduction to one who is a 70% or a 75% user. On the other hand, if the 80% user is entitled to such a reduction, it would be difficult to deny a 90% or 100% user a still greater reduction. Moreover, it does not follow that [an 80% user] would be a consistent user of the respondent's services in any meaningful sense; that is, there is no assurance that an 80% user would ship a regular and predictable volume of freight per day, week, or month."

Antitrust Law Cited

As to allegations that the contract rate violates the Sherman Antitrust Act, the United States Supreme Court has held that the Commission has no power to enforce that act. That was noted by the Commission, but it noted, too, that the court has also said "we may not be unmindful of the general policy of the antitrust law in favor of competition in applying the standards of the Interstate Commerce Act."

From that the report went on to say the "inevitable effect" of the guaranteed-rate arrangement "is to destroy competition for the duration of the contract." The shipper's vested interest in the contract rate, especially during the final months of the contract, "would discourage or prevent acceptance of an offer of superior transportation service at an equivalent or lower rate, nullifying any inherent advantage of other transportation agencies as a competitive factor," the Commission also argued.

These are matters which "may not be ignored," the Commission added, proceeding then to give Central this advice: "Where lower rates on traffic, all of which moves under substantially similar transportation circumstances, are necessary to regain or retain traffic, the remedy of reducing regularly-published rates is available and should be used."

Watching Washington, which usually appears in this space, is on page 14.

Following through from its call upon the Commission to permit experimentation, the Freas-Herring dissent said "it is not our function, in the absence of illegality, to substitute our judgment for that of the carriers with respect to the wisdom of their proposals."

On the issue of legality, the dissent recognized that there was "intense competition" for the traffic at stake—"but the desire to improve one's competitive position is not condemned by the specific statutory provisions we administer." Only when competition becomes "unduly destructive" is it to be restrained, Mr. Freas explained, stressing the importance of noting the word "unduly" —for "any competition tends to be destructive of competing interests in some degree." An attempt, "by means otherwise lawful," to stem diversions or regain traffic "can hardly be called unduly destructive," Mr. Freas also said.

The dissent also challenged much of what the majority said in distinguishing the case from the volume-rate and multiple-car cases, including a statement that the difference between the agreed charge and the regular rate was "without any discernible difference in transportation circumstances." There Mr. Freas said:

"Traffic which assures or occasions an over-all improvement in efficiency or economy has been found to warrant a difference in treatment, ratewise, from that accorded to other freight, even though consisting of identical commodities moving in the same quantities from and to the same points. . . .

"An attempt is made here by the majority to distinguish three recent cases involving coal, but the factors stressed there do not appear to be wholly relevant to this particular argument. Furthermore, neither the indicated contingency nor the relationship of the total annual qualifying tonnage to the cost of handling either single shipments or of handling a similar aggregate volume moving under ordinary rates during a corresponding period was considered important enough in No. 32871, *Coal to New York Harbor Area*, to prevent there the approval of what, in effect, are contract rates.

"It is odd that in the latter proceeding the various and different specified minimum qualifying annual tonnages provided for obtaining the benefit of the lower rates were not deemed sufficient to condemn the rates, whereas here the majority seems to indicate that the required uniform percentages of a shipper's annual traffic does lead to unlawfulness."

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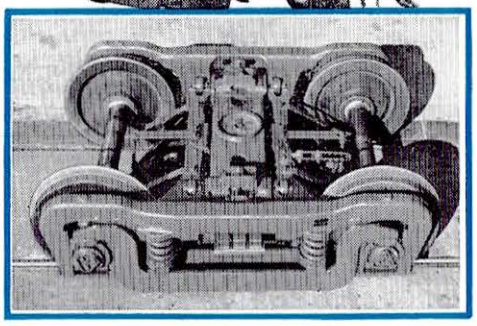

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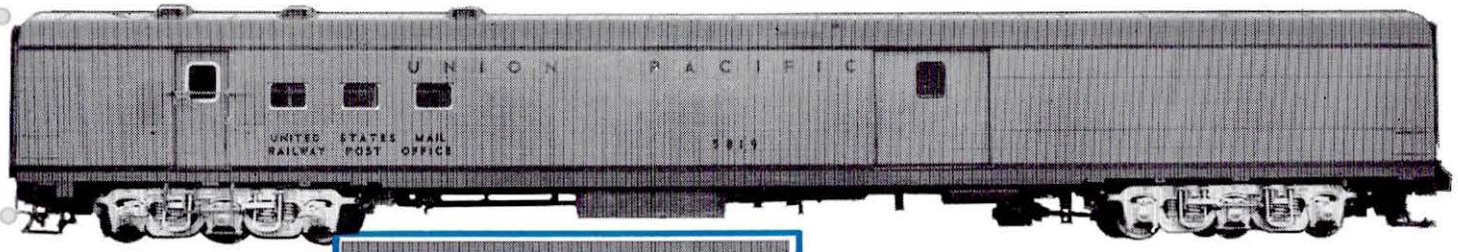

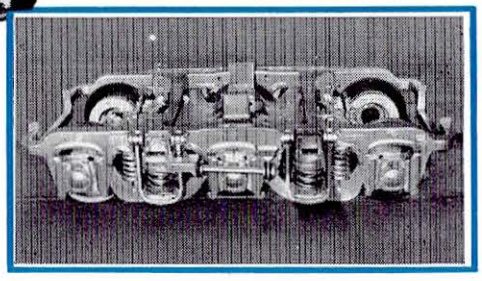

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M/W Panel Looks at TOFC

Piggyback questions, those with a specific maintenance-of-way slant, were major topics discussed by a panel of experts at the February meeting of the Metropolitan Maintenance of Way Club in New York. With W. D. Almy, engineer, maintenance of way, Jersey Central Lines presiding, the panel consisted of: J. B. Dowling, co-ordinator, TOFC sales, New Haven; Herbert Lucas, supervisor, TrucTrain terminals, PRR; E. J. Paronett, manager, Flexi-Van sales, New York Central; and Alfred Wisman, supervisor, work equipment and welding, Jersey Central Lines.

Mr. Wisman described some of the problems piggyback is creating for maintenance departments, and some of the solutions that have evolved. Operating and traffic requirements required "a location with a good exit to a highway, truck terminal, or a way to get into the metropolitan area quickly" for piggyback yards, Mr. Wisman pointed out, and maintenance personnel were asked to rebuild facilities to new specifications at old sites.

The job began with removing tracks, grading and paving roadways and parking areas, installing lighting and building a ramp at one end of a track. Original facilities were mostly for one-trailer flat cars with limited load weights, he noted, adding, "The old No. 7, No. 8 and No. 9 switches in the leads in the yards did a fine job in getting the cars to the yard," but "as the service grew, shippers and builders got into the act and designed new cars, new containers, new cranes and new ramps." In addition, Mr. Wisman said, maintenance forces have to be ready to deal with such matters as: rubbish and trash removal, snow removal, flat tires on a tractor or trailer, a slippery ramp that prevents loading, etc. "Inspection and running repairs to the trailers is a major problem," Mr. Wisman concluded. "To make the necessary repairs is not a big task, but who is responsible for this and who should be billed for these repairs, the owner of the trailer or container, the shipper, or one of the truckers who handled it?"

J. B. Dowling, co-ordinator, TOFC sales, New Haven railroad, explained the many piggyback plans and some of the history of piggyback since the New Haven began Plan I operations in December, 1937. A major problem, Mr. Dowling noted, is trailer standardization. "When we began piggybacking, the height of the average trailer was 11 ft 4 in. to 11 ft 8 in. with maximum length 32 ft, but now the hi-cube trailers are 40 ft long, 12 ft 6 in. in height, 8 ft wide, and have a cubic capacity of 2,300 or more feet," he remarked.

This creates a clearance problem for piggyback traffic, and Mr. Dowling added that the New Haven has recently spent $200,000 to increase clearances between Boston and Maybrook, N.Y., to permit handling 12 ft 6 in. hi-cube trailers on flat cars up to 3 ft 8 in. above the rail; total clearance, 16 ft 2 in.

Edward J. Paronett, manager, Flexi-Van sales of the New York Central described Central's Flexi-Vans, which he said, are "carrying more revenue through to net than any other venture yet undertaken on the New York Central" and are "five to six times more profitable than regular freight." "No other medium on the Central has been subjected to such rigid cost controls," Mr. Paronett said, adding, "We know the exact cost of moving a van between any two points on the system, regardless of the plan employed. If we find a rate or a movement profitless, we refuse participation.

"Flow is carefully analyzed so as to balance equipment. In November, our empty mileage stood at 6.2%, Flexi-Van cars averaged 237 miles per day, our car fleet averaged 7.2 revenue trips and grossed an average of $4,000 each. Comparing these figures with box car earnings will give you a pretty good idea which way the ship is headed."

Herbert Lucas, supervisor, TrucTrain terminals, PRR, described Pennsylvania's piggyback policy. PRR, he said, has "a completely open mind on any new innovations that we or anyone else may propose."

Comparing the various plans, Mr. Lucas commented that PRR handled 44,151 trailers in Plan I in 1960.

Plan II, in 1960, brought 27,800 trailers to the PRR. Plan III moved over 21,700 trailers in 1960, he said, after having begun in 1958, and a volume of 30,000 trailers is predicted—Plan III for 1960. Plan IV, on the other hand, has remained relatively low in volume, he said. As to comparative revenues, Mr. Lucas said that Plan I produced 20.3 cents per trailer mile, Plan II, 24.47 cents per trailer mile, and Plans III and IV, 26.26 cents per trailer mile.

'How Do You Deal With Derailments?'

The new, well cared for equipment in piggyback service has an enviable record of smooth operations. There are a number of reasons, though, why piggyback creates special problems if a derailment does occur. Herbert Lucas, PRR's supervisor of TrucTrain terminals, was asked: "How do you deal with derailments?" In reply, he quoted a report made on his railroad following the derailment of train TT-2 in May, 1959. Here are the highlights:

- Length of flat cars and high centers of gravity make it almost mandatory that trailers be unloaded before attempting to handle the car, if the car is derailed and lying at an angle where the high center of gravity might cause it to topple. Trailers can generally be left on if the car can be retracked with rerailers or is upright. Coupler hitches are not recommended on loaded cars under any circumstances. If it is necessary to lift a car with trailers, it's advisable to be careful of lateral stress, which may break the stanchion and let the trailer fall.
- For many kinds of piggyback, waybills do not show contents, making it necessary to open trailers and examine contents.
- Trailer construction is generally lighter than for rail equipment. Spreader type tackle, as light as possible but with a capacity to handle loaded trailers with a 30-ton gross weight, is needed rather than standard wreck tackle. The hook-up should be short.
- Piggyback wrecks often involve valuable commodities, which may involve extra manual labor in transferring lading. Also, some commodities, as well as gasoline and fuel oil from refrigeration units, add to fire hazards. Off-track fire fighting equipment may be needed.
- In estimating time for clearing, it should be noted that in retracking an 85-ft car, approximately two rail lengths must be rebuilt before the wrecker can continue working.

'The Fireman's Job No Longer

► **The Story at a Glance: The Presidential Railroad Commission was told by a management witness last week that enforced employment of firemen has kept railroads from making wider use of technological improvements. Management's case for eliminating firemen from diesels and other non-steam locomotives in freight and yard service was epitomized by another witness who said "the fireman's job no longer exists."**

Continuing its public hearings in the so-called "featherbedding case," the Presidential Railroad Commission is still receiving evidence on the fireman issue. The commission is that appointed by former President Eisenhower to study the dispute over working rules applicable to operating employees.

The public hearings are being held despite objections of the "op" unions. They ran two days last week and are scheduled for three days this week. Vice Chairman Russell A. Smith was still acting chairman of the commission.

Presumably, the labor and management members had not got together on whom they will recommend as successor to the former chairman, James P. Mitchell, who resigned to run for governor of New Jersey. President Kennedy has promised to appoint a new chairman as soon as the railroads and unions submit a joint recommendation.

The statement that employment of firemen has slowed technological improvements was made by W. H. Leahy, operating assistant to general manager of transportation, New York Central. "Enforced presence of firemen discourages expenditures which would only further reduce their functions," he explained.

Mr. Leahy also said that safety in railroad operations "is entirely independent of either the presence or the absence of a fireman." He pointed out that Central's New York City commuter service has carried "thousands of passengers each day for more than 50 years with but one man, the engineer, on the head end."

This commuter service, Mr. Leahy added, is "more intricate and involved" than other NYC road services. Thus, he is "satisfied that we can operate our freight trains in safety with two men on the head end—an engineer and brakeman."

It was a former fireman—W. D. Quarles, Jr., director of labor relations, Atlantic Coast Line, who testified that the fireman's job "no longer exists."

Watching Washington *with Walter Taft*

• **THE RAILROADS' SHARE** of national income continues to decline. The ICC's Bureau of Transport Economics and Statistics calculates that gross revenues in 1959 amounted to only 2.6% of the national income, down from 1958's 2.7%. This was less than half the industry's 1939 share, which was 5.7%.

MEANWHILE, the relative position of the scheduled domestic airlines became five times as good. They got 0.5% of the national income in 1959, compared with 0.1% in 1939. Moreover, the airline-revenue factor is somewhat understated, because it omits revenues of the non-scheduled lines which have become more important in recent years.

THE RATIOS also show the truckers' share up from 1939's 1.1% to 1959's 1.8%. Bus companies and pipelines continued to hold their own, and at the same level. Each had both 1939 and 1959 revenues equivalent to 0.2% of national income.

ON AN INDEX-NUMBER BASIS, with 1939 as 100, the national income index for 1959 was 548.9. The 1959 index of railroad revenues was only 246.5 while the airline index was 3471.9. Truck revenues also grew faster than national income, the truckers' 1959 index having been 901.9. Bus and pipeline indexes for that year were 373.7 and 360.1, respectively.

• **SAFETY OF RAIL TRAVEL** in 1960 was nearly seven times as great as that of travel by air. This comparison is made by the AAR on the basis of last year's passenger fatality rates. The rate for domestic airlines was 1.01 passenger deaths per 100 million passenger-miles. The railroad rate was 0.15.

PASSENGER FATALITIES on the airlines last year were 10 times the railroad total—326 compared with 32. And the latter included 15 passengers killed in so-called "train-service" accidents, which are usually caused by traveler carelessness.

MOST HAZARDOUS form of travel, however, is still the automobile. Accidents involving private cars and taxicabs killed 25,000 people last year. On the basis of estimated miles traveled by automobile passengers, this would make the fatality rate 2.3 per 100 million passenger-miles—more than 15 times the railroad rate and more than twice the airline rate.

• **TWO MORE ICC BOARDS** have been established by the Commission as part of the streamlining which has been under way since the first of the year. They are the Special Permission Board and Released Rates Board, and they are expected to handle annually some 16,000 matters which heretofore required action by a commissioner or the Commission's Division 2.

MATTERS relating to applications for permission to publish rates on less than 30-day notice, and for relief from tariff-publishing rules, will be handled by the Special Permission Board. The Released Rates Board will handle applications to establish rates and ratings based on released valuations limiting loss and damage claims. Decisions of the boards may be appealed to Division 2, but the division's decision will be final, not subject to review by the Commission.

Exists'

Any discussion of what the fireman does on diesels will necessarily become a discussion "at disproportionate lengths of a great deal of trivia," Mr. Quarles also said. He explained: "This is because the fireman can only spend his time in idleness or in doing little things for the engineer and the brakeman."

The ACL officer also testified that conductors and other members of train crews are "becoming dissatisfied" as a result of the fireman's presence. It is "very disheartening," to these employees, he added, "when they see a fireman sitting on the other side of the locomotive with nothing to do and earning more money then they do."

Another former fireman—R. J. Dimmit, assistant division superintendent, Milwaukee—said that, since advent of the diesel, he has noticed "a continuing drop in the morale of the fireman." He thinks this is a reflection of the "considerable boredom associated with any job where there is very little to do."

Gerald M. Magee, director of engineering research, AAR, made a presentation designed, he said, to show the "safety consciousness" of the railroads, and to emphasize that an industry so aware of safety "would not recommend or seek to obtain a change in train-crew practices which would have any detrimental effect on safety so laboriously and assiduously strived for."

George W. Baughman, assistant to the president, Westinghouse Air Brake Co., also cited railroad advances in safety and technology. He noted how traffic control and signal systems, developed by Westinghouse's Union Switch & Signal Division in conjunction with railroads, have promoted safety while improving service. Mr. Baughman also mentioned his company's continuing work on remote control systems.

T. B. Dilworth, chief engineer, Electro-Motive Division, General Motors Corp., told the commission his company was of the opinion that a fireman "is not needed from a mechanical standpoint to move a diesel-electric locomotive over the road." Mr. Dilworth explained that it was Electro-Motive's intent and purpose to build locomotives that require a minimum of on-the-spot maintenance, and that this has been largely achieved since this country's first diesel powered train made its initial run in 1934. That run, he recalled, was made without a fireman.

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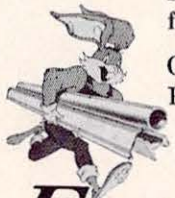

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What Today's Heavier Wheel

The effect of heavier wheel loads on rail is a growing cause of concern to track men. Studies and field observations show that the heavier wheel loads being imposed on rail today are causing severe shelling, head checks and corrugations, especially on sharp curves. Since the problem is due to contact pressures rather than flexural stresses, increased rail sections are not the answer. In what he refers to as a "horseback" analysis—written exclusively for Railway Age—the author points the way to a possible solution.

BY G. M. MAGEE
Director Engineering Research, AAR

G. M. MAGEE

Increasing wheel loads for freight cars are nothing new. They have been increasing on the average for years. During the 1921-1959 period the average freight-car capacity increased from 42.5 tons to 55.0 tons, an increase of 30%.

The capacity of a freight car is determined in its design by its volume and the size of the journal bearing. For a 50-ton car a 5½-in. by 10-in. bearing is used, permitting a load limit of 169,000 lb or 21,125 lb per wheel. For a 70-ton car a 6-in. by 11-in. bearing is used permitting a load limit of 210,000 lb or 26,250 lb per wheel. For a 90-ton car a 6½-in. by 12-in. bearing is used permitting a load limit of 251,000 lb or 31,400 lb per wheel.

Up to the present time, 33-in.-diameter wheels have been generally used on freight cars. Railway maintenance engineers have been aware for several years of the effect that the increasing wheel loads are having upon the rail. Some may ask: "But hasn't the size of rail been increased correspondingly?"

It is true that the size of rail has been increased, and this has been most helpful in increasing rail life and promoting economies in track lining and surfacing costs with the stiffer rail sections. As a result of this increase in rail size the rail in main track today is generally quite capable of supporting the increasing wheel loads insofar as flexural stresses are concerned.

However, the critical stresses in rail today are those associated with the contact pressures of the wheel on the rail. In the longitudinal vertical plane the rail surface is straight and the wheel has a diameter of 33 in. In the transverse vertical plane the rail wears to a radius of 10 in. and the wheel tread hollows to a radius of about 17 in. The actual contact area of the wheel on top of the rail is an ellipse on the order of ¾ in. wide and ⅝ in. long. This small area must withstand the entire wheel load and its size is not affected or increased by the size of the rail.

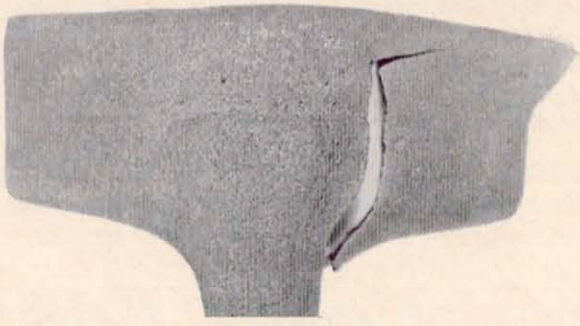
The contact surfaces of the rail and wheel are subjected to high compressive stress from the wheel load, which results in internal compression, tension, and shearing stresses within the rail head. These stresses at any one point vary in magnitude as the wheel rolls along and also reverse in direction to some extent or fully, thus giving a condition of stress change or reversal that is conducive to the development of progressive or fatigue failures.

Thus, it is not the flexural stresses in the rail with which we are concerned when considering increasing wheel loads, but the stresses associated with the contact pressures or bearing of the wheel on the rail. Contact pressures which result in stresses beyond the yield or fatigue strength of the rail result in excessive batter at rail ends; flow; corrugation; head checks, flaking, or shelling and progressive fractures therefrom; head and web separations; horizontal and vertical split heads; and progressive fractures from engine burns. As a matter of fact, 9,715 of the 12,353 rail failures, or almost 80% occurring in the past ten years' rollings of control-cooled rail, were the result of the contact pressure of the wheel on the rail.

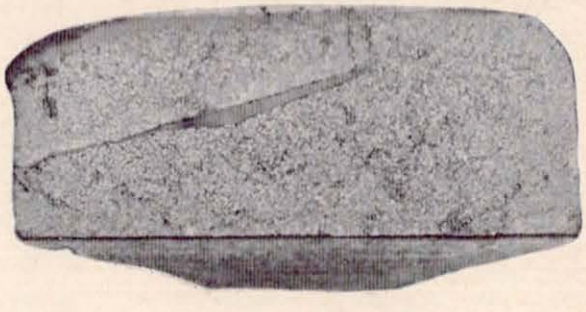
Larger Rail Won't Help

What can be done about it? As previously stated, increasing the size of the rail has not helped and will not help. Increasing the strength of rail steel would help, but our present rail steel is already as strong as can be obtained without heat treatment. The cost of heat treatment, approximately $65 per ton, when added to the cost for rail of $115 per ton, puts this expedient out of the question economically, except for certain locations on sharp curves carrying heavy traffic density. Also, since we are replacing only about 5,000 track-miles with new rail each year (and the last three years much less than that), it would take 50 years to get all of our main-line track relaid with heat-treated rail. The same reasoning applies to any change in

Typical rail failures associated with contact



Vertical split head



Horizontal split head

Loads Are Doing to Your Rails

rail contour that might be made, although actually we know of no such change that can be made that would be helpful.

The situation is different with wheels. With heavier cars, it is entirely practical to equip them with heat-treated wheels that are capable of withstanding the contact pressures developed. However, some wheel loads now being considered are even beyond what the manufacturers consider can be carried on heat-treated wheels without shelling.

There are only two practical alternatives available for keeping the contact pressures of the wheel on the rail within limits that can be tolerated by the rail without damage or shortened life. One is control of the wheel load and the other is control of the wheel diameter. Theoretical formulae, which have been confirmed to some extent by three-dimensional photo-elasticity studies, show that the magnitude of the internal stresses resulting from the contact pressures decreases in direct proportion with a decrease in wheel load but more than in direct proportion with an increase in wheel diameter. Thus, an increase in wheel diameter is more effective than a decrease in wheel load in limiting the contact stresses.

How do we know what wheel contact pressure rail is capable of sustaining without failure or shortened life? Even after years of work, we have been unable to develop laboratory repeated-load machines that will exactly simulate service conditions on an accelerated basis. However, Professor R. E. Cramer, in charge of the "Rails Investigation" at the University of Illinois under the joint sponsorship of the American Iron and Steel Institute and the AAR, has come close to it with his cradle-type machine. With this machine, he uses a 33-in. cylindrical wheel, and as the wheel rolls back and forth on the rail, the inclination of the rail is changed slightly every few cycles so the wheel bearing moves from near the center of the rail to the extreme gage corner and then back again in continuing cycles.

This machine simulates the condition of wheel contact on the gage corner of the outer rail of curves. In this machine, in order to get shelly failures within a reasonable test period with regular rail steel, Professor Cramer has found it necessary to use a wheel load of 50,000 lb. Although there is some variation between individual rails, shelling has, on the average, developed after 1,000,000 cycles of loading with ordinary control-cooled rail.

Considering there are two wheel passages for each cycle of loading, this would be equivalent to 100 million gross tons of traffic carried. In general, shelling has been found to develop on sharp curves in track after 100 to 125 million tons of traffic. Thus, although the wheel load Professor Cramer has used is considerably more than we have today in general service, there are evidently other conditions in service, such as the lead wheel of each truck continually trying to climb the outer rail, which make the wheel loads in actual service conditions equal in shelling effect to the much higher wheel load used in the laboratory cradle-type rolling load machine.

Other evidence of permissible wheel-contact pressures on rail is given by the apparent effects that may be readily observed from the rail condition in track. For instance, flow and corrugation occur on the low rails of curves where the wheel loads of freight cars are somewhat increased due to the train speed being less than the equilibrium speed for the curve elevation. Another example is the development of progressive fractures from stress raisers such as engine burns, head checks, shelly spots, inclusions, hot torn steel and shatter cracks (in controlled-cooled rail).

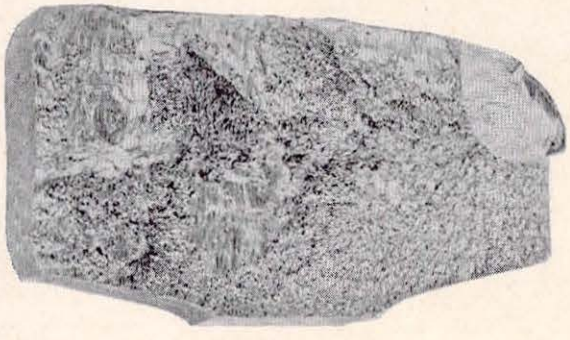
C. J. Code, assistant chief engineer-staff of the Pennsylvania, conducted a test in which small holes were drilled at various locations and angles into the gage corner of the high rail of a curve and copper pins driven into the holes. After several months service, the rail was removed and sawed transversely through each pin. It was evident from the bent and distorted condition of the pins that the gage corner metal was being severely cold worked and plastically flowed from the intensity of the contact pressures.

Make Study of Wheel Loads

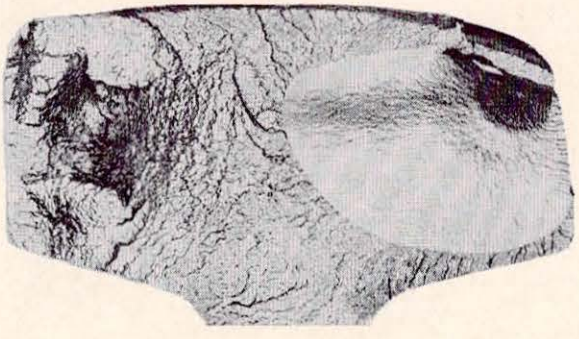
The subject of the permissible limit of wheel load as related to wheel diameter has been given intensive study by the AREA Rail Committee, the AAR Joint Committee on Relation between Track and Equipment, and our AAR Research Center staff for the past 20 years. As a result of this study, a recommendation covering the relationship between wheel load and wheel diameter was made to the executive

(*Continued on page 20*)

pressures on the rail



Progressive fracture from head check



Progressive fracture from shelling

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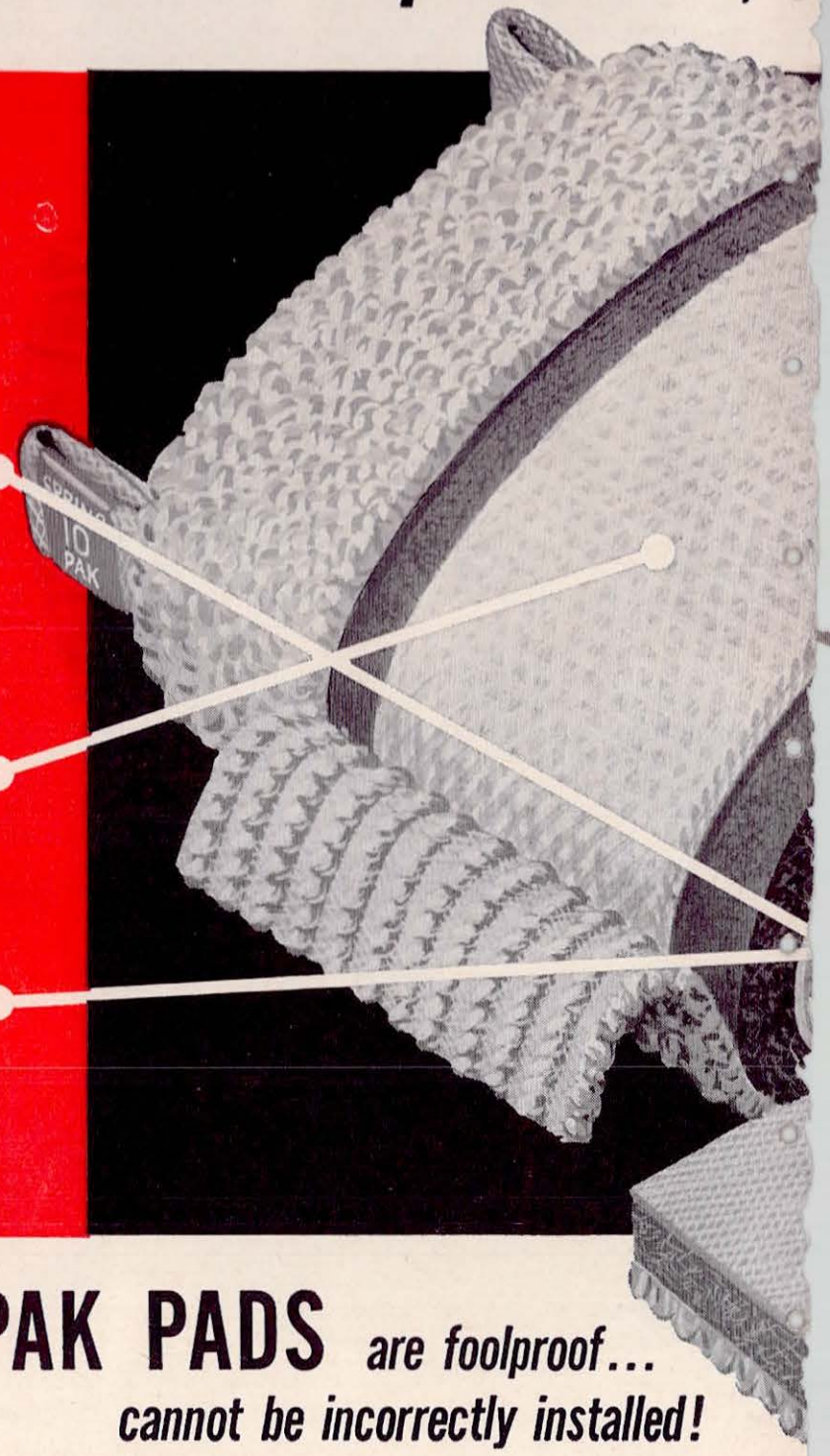

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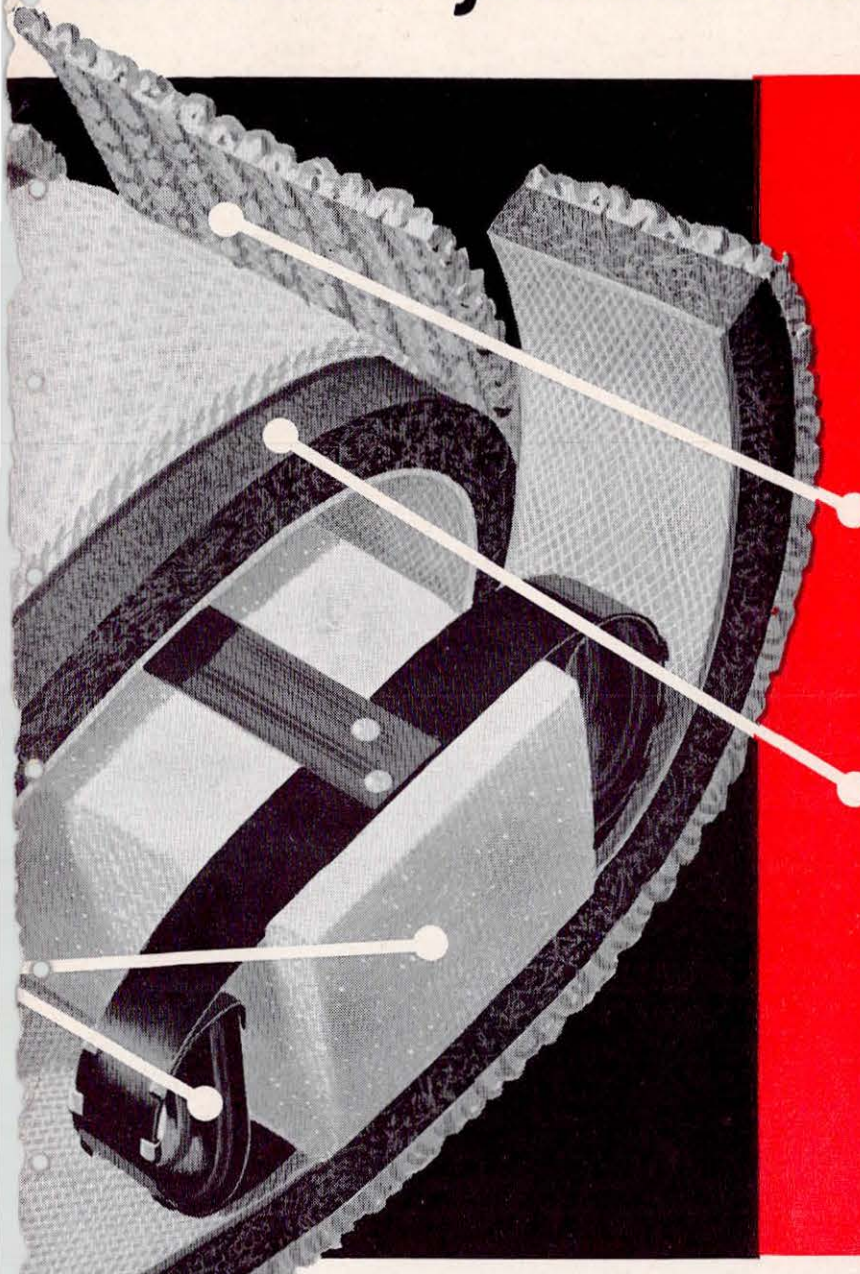


Check these famous traditional Spring-Pak Features!

TUFTED COTTON COVER is of special long-wearing loop-woven material. Loops are securely anchored. Its continuous wicking action prevents glazing or sticking to journal, even in sub-zero weather.

OIL RESERVOIR of rugged highly absorbent felt holds oil entirely around pad, providing an abundant supply of oil just beneath the cover.

THREE YEARS in actual service has proved that this combination of tufted cotton cover and heavy felt assures long life with regular reclamations.

LEADER IN THE LUBRICATION FIELD FOR OVER 43 YEARS

SPRING PACKING CORPORATION

John T. Landreth, President

332 South Michigan Avenue, Chicago 4, Illinois

Conditionally Approved A. A. R.

vice-chairman of the AAR Mechanical Division in a letter dated April 29, 1959. The letter was signed by Mr. Code as chairman of the Joint Committee. The recommendation read:

"For economical rail life it is recommended that, for new construction of cars and locomotives, the maximum limit per inch of nominal wheel diameter be set at:

800 lb for 33-in. wheels (26,400 lb total)
810 lb for 36-in. wheels (29,200 lb total)
820 lb for 38-in. wheels (31,200 lb total)
825 lb for 40-in. wheels (33,000 lb total)
830 lb for 42-in. wheels (34,900 lb total)

except for a limited number of special cars for heavy loads which shall be subject to approval by the Mechanical Division of the AAR."

The Mechanical Division did not accept the recommendation of the Joint Committee in its entirety, but did make the following provision in Rule 3 of the rules for interchange of freight cars.

"Wheel: Cars of over 70-ton normal capacity up to and including 100-ton nominal capacity built new on and after January 1, 1961, shall be equipped with steel wheels of at least 36-in. nominal diameter when four-wheel trucks are used."

Also, the Joint Committee was requested to give further study to this subject to determine further proof of the damaging effects of contact pressures from the higher wheel loads and to study possibilities for improving the situation by a change in the rail and wheel contours.

Observations of Rail Damage

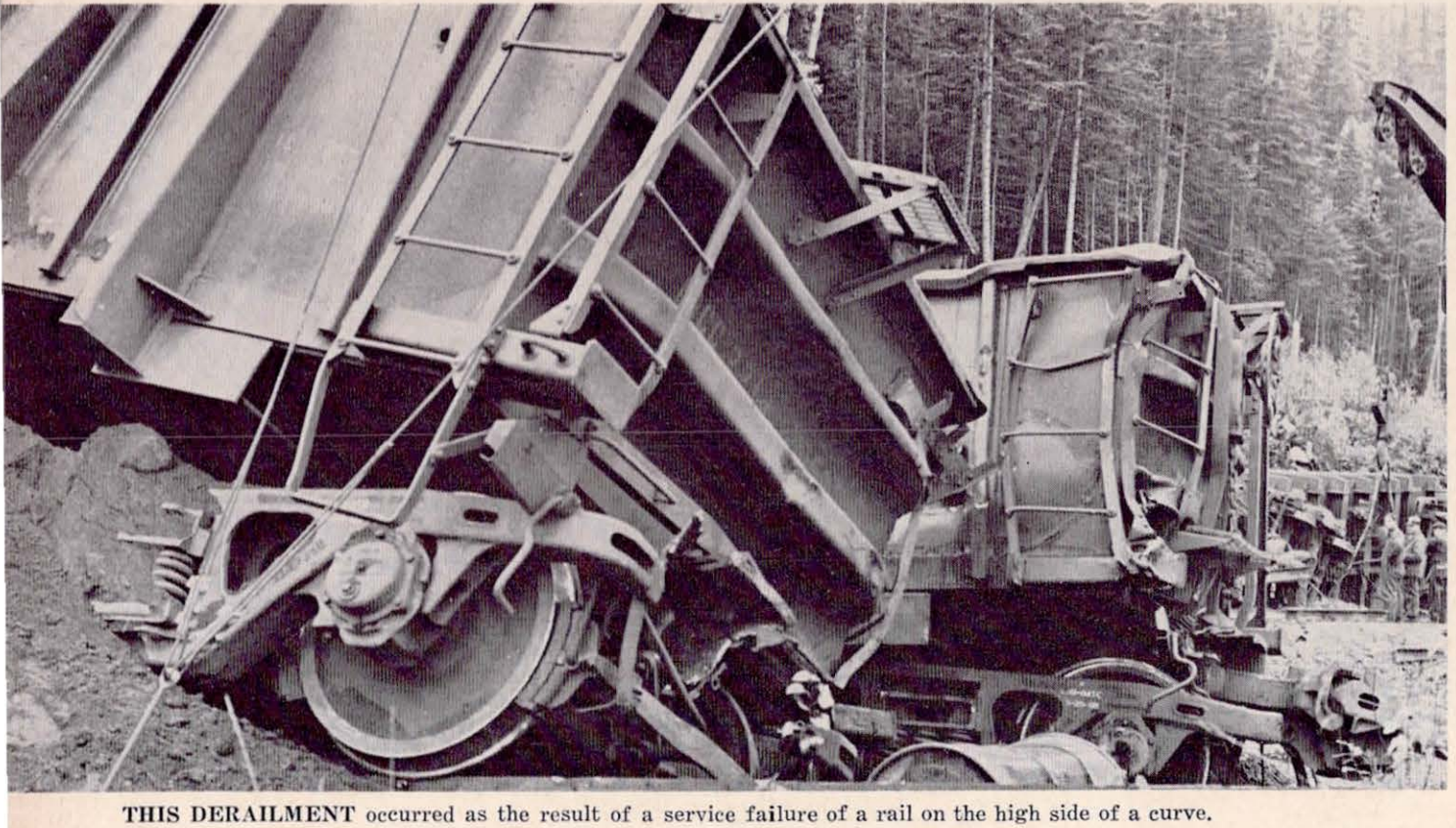
During the past year, I had the opportunity of making two observations of rail conditions that afforded valuable information on this subject. One was an inspection of continuous welded heavy rail laid new in the spring of 1956 on a heavy-traffic main line. An appreciable amount of shelling had developed after 100 million gross tons of traffic on the high rail of several curves. Much of the shelling was so severe as to require rail replacement.

The other inspection was on a line carrying ore traffic exclusively. This was of particular interest because the traffic density was about the same as the road previously mentioned (25 million gross tons annually), but all of the southbound traffic on this single track line was in loaded ore cars having a wheel load of 31,400 lb on 36-in.-diameter wheels, or a wheel load of 870 lb per inch of diameter. After six years of service and 125 million gross tons of traffic, the rail in the sharper curves had been transposed once, and in a few the high rails had later been turned end for end.

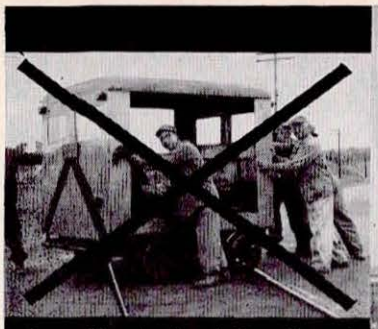
There was considerable shelling on the high rail of some curves, and the low rail on some curves was badly corrugated. Of most significance, however, was the surface condition of the tangent rail. There was evidence at many locations of severe head checks extending almost half way across the rail head. In some locations, the metal had spalled out across the entire contact surface of the rail head. For normal wheel loads as we have them now in this country and for 25 million gross tons of traffic density, the 132-lb RE rail section used should carry at least 500 to 600 million gross tons of traffic before requiring renewal. It is my belief that due to the high wheel loads and contact pressures on the particular road, not more than one-half of this traffic life will be obtainable from this rail.

Yet today, some railways are using and accepting in interchange wheel loads 10% in excess of the AAR established load limit. This means that cars having 6½-in. by 12-in. journal bear-

(*Continued on page 22*)



THIS DERAILMENT occurred as the result of a service failure of a rail on the high side of a curve.



Save Hundreds of Man-Hours!

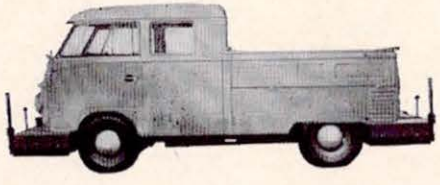
Electric Turntable Jack Converts

VOLKSWAGEN TO RAIL TRUCK IN LESS THAN TWO MINUTES!

New Gandy Wagon converts to economical Volkswagen truck for highways . . . moves up to 9 men on road or track! Prevents costly crew tie-ups! Men keep moving by road when rail clearance is limited!

Proven by leading railroads . . . the most efficient way to move men and materials from highway to rails! The low cost rail-to-highway Gandy Wagon cuts "down time" . . . no waiting around for track to clear! You free men for **working** time. When track is closed, men can go by highway. Turntable jack on Gandy Wagon gets your crew back on the track at the nearest grade crossing within minutes!

The Gandy Wagon is versatile—you can use it as an inspection car (no hood—you see directly down onto track)—you can turn it around on the track and return to station in forward gear. Your ride is safer too . . . because Gandy Wagon's weight is on its front 14" flanged wheels, and you get 4-wheel hydraulic braking on track and highway, independently sprung flanged wheels, and wheel aligning adjustments to avoid crabbing. Carefully engineered for heavy-duty performance under all railroad operating conditions.



Choice of pick-ups, 6 seater trucks or 9-seater Kombie for crew and patrol service. Also luxurious inspector station wagons for Chief Engineers.

Write or call now for demonstration!

GANDY WAGON

Box 151, Oyster Bay, N.Y.
Phone: WAlnut 2-6671

Corporation

 (*Continued from page 20*)

ings and 36-in. diameter wheels are being operated over rail with a total load of 276,100 lb. This is equivalent to 34,500 lb per wheel, or 960 lb per inch of wheel diameter.

As one who has striven for the 23 years that I have been with the AAR to improve rail design and metallurgy, to reduce rail failures and to prolong the life of rail, I am seriously concerned about the effects that such heavy wheel loads will have upon rail damage, rail failures, and rail life. The total investment in rail for Class I railways in the United States is about $2 billion. At present-day prices it would cost on the order of $7.5 billion to replace all rail in main-line track.

Certainly I have no wish to oppose any progress that is for the overall good of the railway industry. I realize that there are many considerations to be taken into account. These include the cost of car construction and repair, per diem, mileage allowances on non-railway-owned cars, costs of road haul, track and structure maintenance, cost of switching and accounting, and effect on attracting additional traffic.

Largely to satisfy my own curiosity I have made a sort of "horseback" analysis or evaluation of some of the foregoing considerations. I have selected 1957 for this analysis because it represents a year of relatively good railway earnings and normal maintenance expenditures. For 1957, the total revenues of Class I roads directly related or assigned to freight service were $9,274,552,825 and the total carloadings were 35,500,148, or an average of $260.80 per car. Average operating expenses directly related or assigned to freight service were $207.50 per carload, giving a net operating income of $53.70 per carload. To what extent could we hope to reduce operating expenses by increasing car capacity and wheel loadings and thus reduce rates with the hope of attracting additional traffic?

Effect on Operating Expenses

Certain operating expenses, such as switching costs and accounting, are directly in proportion to the number of cars or shipments handled and would be little increased by increasing the car capacity. Other expenses, such as for car repairs, would be increased with an increase in car capacity but not in a direct ratio. Road-haul transportation costs would be increased almost in proportion to the increase in car capacity and weight. Maintenance-of-way expenses, at least for some items, would be increased more than the percentage increase in car capacity and weight. Other items of operating expense are fixed or not actually influenced by the amount of traffic or number of cars except to the extent that available revenues make this necessary.

I have gone through each expense item in the ICC Transport Statistics for 1957 and separated them as they would fall, in my judgment, in the various categories above listed. I then figured what the cost of each item would be per carload. The results are as follows:

Switching and accounting .	$ 30.10
Car repairs	16.03
Transportation (Road haul)	36.40
Maintenance of way	13.95
Fixed operating expenses except taxes	85.02
Taxes	25.60
Total expenses per carload	$207.10
Net operating income ...	$ 53.70
Total revenues	$260.80

A study of these figures gives rise to some interesting speculations. If we were to double the car capacity and handle the same traffic with one-half the number of carloadings, we would save one-half the switching and accounting costs. Assuming that savings in car repairs would be offset by added costs for maintenance of track and structures, the reduction in operating costs would be $30.10, or approximately 6% of the $521.60 revenue for the double capacity car. On the other hand, net operating income would be increased by 27%. However, a reduction in rates of only 6% would eliminate this increase in net operating income unless additional traffic were attracted thereby. With such a large proportion (53%) of operating costs made up of fixed charges that would not be appreciably increased by an increase in the amount of traffic, any reduction of rates that would attract additional traffic without loss in income from the present traffic would have much to commend it.

If, as it appears, the principal savings in operating expenses with heavier cars is in switching and accounting costs, could this saving not be effected as well by offering the same "load incentive" rates for two 50-ton cars operated as a unit in lieu of one 100-ton car? The maintenance, interest, depreciation and terminal inspection costs would be somewhat greater for two 50-ton cars than for one 100-ton car. However, we would not be overloading the journal bearings, axles, wheels, rail, ties, roadbed, and bridge structures. And we have 50- and 70-ton cars available, so that such a service could be offered now on an extensive basis. The construction of new 90- or 100-ton cars could only be on the basis of a relatively few per year, so that only a limited service could be offered with them for several years in the future.

A comprehensive economic study of car construction and maintenance costs and track and structures maintenance costs with regard to the use of 90- and 100-ton cars and overloading of existing cars would seem well worth while. With what data there are at hand, supplemented with estimated costs furnished by experienced men, I believe a study could be made that would be a valuable guide to judgment.

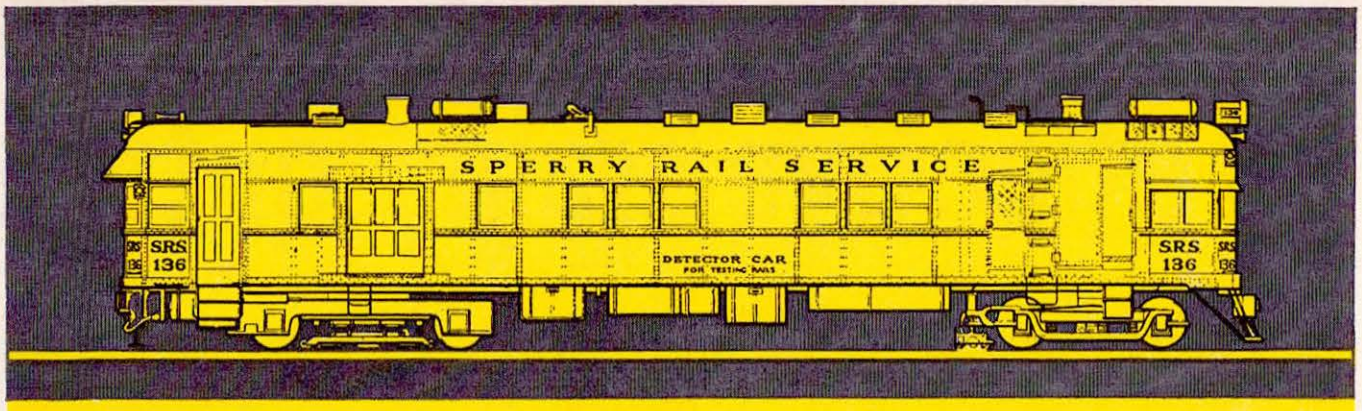
How Cars Affect Track Costs

I am not familiar with data available regarding the costs of car construction and maintenance for different car ca-

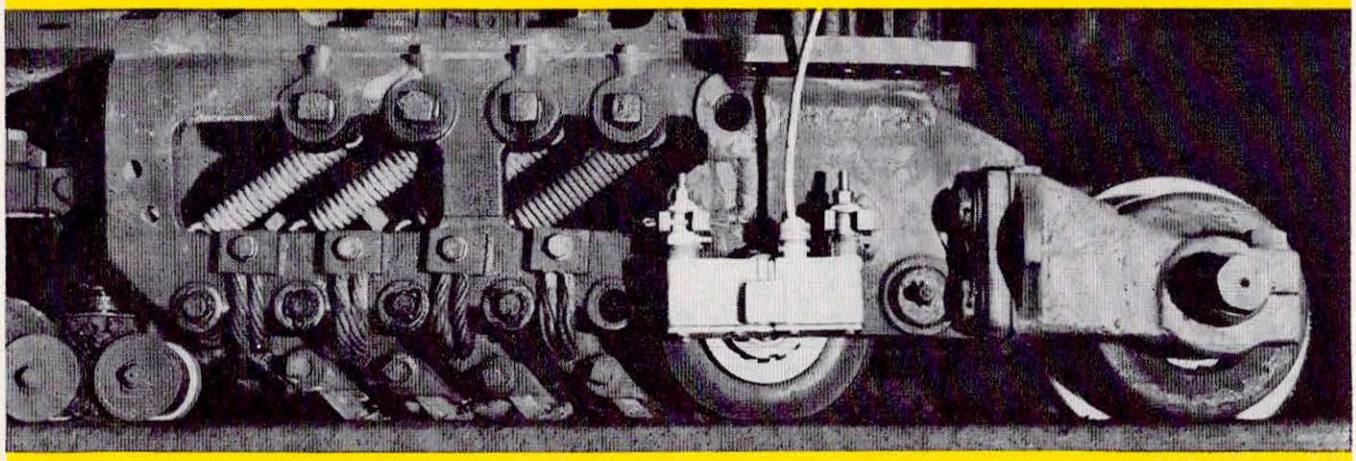
(*Continued on page 26*)

Estimated Track-Maintenance Costs for Various Cars

Car Capacity—Tons	50	70	90	100
Gross Car Weight—Tons	84.5	105.0	125.5	138.0
Wheel Load—Lb.	21,125	26,250	31,400	34,500
		Cost per Million GTM		
Rail Renewals	$ 50.00	66.70	100.00	150.00
Tie Replacement	30.00	33.60	45.00	51.00
Ballast Replacement	14.50	17.30	19.00	20.90
OTM Replacement	69.00	80 50	103.50	138.00
TL&S Expense	170.00	202.50	223.00	245.00
Total	$333.50	$400.60	$490.50	$604.90
Relative in Percent	100.	120.	146.	180.



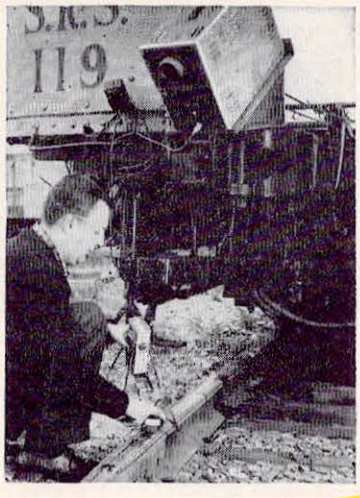
Sperry Adds Ultrasonics



Contributes to Rail Safety

Sperry Rail Service supplements Detector Car induction testing with ultrasonics. Now each rail can be tested from end to end for transverse defects in the rail head. As a result your test dollar searches more rail, including the critical joint bar area, and finds more of the defects which could cause rail failure.

Here is another example of the continuing product development and constantly improving techniques available to all railroads which use Sperry Detector Car Service.



Flaws in the joint bar area, found by the ultrasonic wheel-transducer, are verified ultrasonically by Reflectoscope and the recently developed Reflectometer.

Sperry Products Company

DIVISION OF HOWE SOUND COMPANY

Shelter Rock Road, Danbury, Connecticut

Reflective Train Control...

TEXAS & NEW ORLEANS, speed limit sign

NEW YORK CENTRAL, resume speed sign

UNION PACIFIC, one mile to yard limit

TEXAS & PACIFIC, slow speed sign

SEABOARD AIRLINE, speed limit

SOUTHERN PACIFIC, flanger sign

MISSOURI PACIFIC, speed limit at spring switch

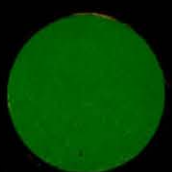
SANTA FE, permanent slow sign

BALTIMORE & OHIO, station sign

CHICAGO & NORTH WESTERN, crossbuck

SOUTHERN, stop sign

PENNSYLVANIA, whistle sign



ERIE, resume speed sign

Reflective Train Control signs give these progressive railroads safety with the economy of a central sign shop system. Colorful, brightly visible signs of "Scotchlite" Reflective Sheeting speak up in the brilliance of headlamps regardless of weather. Give trainmen lighted signs *that never fail*, without the cost of lights! Get operational safety plus economy with RTC signs that can be mass-produced in your sign shop. Long life durability of "Scotchlite" Sheeting slashes maintenance costs and eliminates painting steps. For specific details write: 3M Company, Dept. RBO-361, St. Paul 6, Minnesota.

*Norfolk & Western, New Haven, Long Island, New York Transit Authority, Clinchfield,

Leading roads use this brilliant concept in economy, safety!*

SOO LINE, switch target

DULUTH, MESABI & IRON RANGE, flanger sign

MONON, yard limit sign

MINNEAPOLIS & ST. LOUIS, whistle sign

BURLINGTON, temporary proceed sign

ROCK ISLAND, station sign

ENVER & RIO GRANDE WESTERN, flanger sign

MILWAUKEE ROAD, switch target

ILLINOIS CENTRAL, stop sign

WESTERN MARYLAND, speed limit

GREAT NORTHERN, mile sign

FRISCO, distance signal

U.S. PAT. OFF.

SCOTCHLITE

BRAND

REFLECTIVE SHEETING

MINNESOTA MINING AND MANUFACTURING COMPANY
St. Paul 6, Minn.
. . . WHERE RESEARCH IS THE KEY TO TOMORROW

3M COMPANY

THE TERM "SCOTCHLITE" IS A REGISTERED TRADEMARK OF THE 3M COMPANY

RTC signs can be easily made in your own sign shop in colors you prefer. Or they can be purchased from sign suppliers. Either way, you get safety and economy.

ner & Lake Erie, and Chicago Transit Authority are not illustrated but also use RTC.

pacities. However, I have made some estimated costs that may be of interest with respect to the cost of track maintenance for different car capacities per million gross ton-miles of traffic carried. These costs are taken from available data supplemented with what I believe to be reasonable assumptions.

In making these estimates, the relative cost of rail renewals is based upon my observations on the ore-carrying line mentioned earlier.

The cost of renewals for other track material is based upon the assumption that one-half of the materials would vary in service life in proportion to the rail life, and the other one-half, such as tie plates, would not be affected by an increase in wheel loading.

The relative cost of ties is estimated on the basis of a 30-year life for half of the ties and a decrease in life for the other half of the ties due to mechanical wear on the basis of the product of the tie plate load and the longer length of the depression curve or creepage movement with the heavier and longer cars. The cost of track laying and surfacing and ballast replacement is taken as the 1957 average for the 50-ton car and increased for the heavier cars in proportion to the energy expended in depressing the track and roadway.

Assuming that increased costs as estimated are reasonably correct, this means that the maintenance of way costs for one 100-ton car would be 138/84.5 times 180% times $13.95, or $41.10 compared to $27.90 for a double 50-ton carload.

I hope that in this article I have brought to those who did not already have it, a better understanding of the effect on rail of increasing wheel loads. I could not expect all to agree with my estimates of increased track maintenance costs with heavier wheel loads, but I hope these estimates will bring an awareness that increased track maintenance costs are to be anticipated with increased wheel loads and that interest will be stimulated in studying all factors of railway operating costs that are involved.

Railroading After Hours with *Jim Lyne*

TRAFFIC UP 100%—I saw some figures the other day of carload receipts by a very large consumer of steel products. His inbound rail movement in 1960 was more than double that of 1956; the ratio of his tonnage by rail was over 100% greater than that of the average consumer of the same products.

How did this happen—at a time when the proportion of total tonnage moving by rail is still trending downward? It happened because both this receiver and the interested railroads had cooperated to make arrangements (intra-plant included) as convenient and economical as possible, with appropriate attention to rates.

The end result was a product at the point of consumption which cost the customer less than if his tonnage had come in otherwise than by rail. A lot of other shippers and receivers would be increasing their rail patronage if they were exercising and receiving the same intelligent attention as this particular receiver.

PA. LAWSUIT—Hardly anything that has happened recently has pleased me more than the heave-ho the Supreme Court gave on February 20 to the Pennsylvania truckers' lawsuit against Eastern railroads. The adverse decision of the lower courts, which the Supreme Court reversed, was highly restrictive against revealing uncomplimentary information about other people.

Extending to other situations what the lower courts held, I even got to wondering whether it would be legal to call a cop if you happened to see a suspicious character crawling into a window. Maybe it would have been okay for one onlooker to yell for a cop, but, if two by-standers were to holler together, might not that joint action be considered a conspiracy against the welfare of a kind-hearted burglar?

Happily, these misgivings are now set at rest. If you have some evidence tending to show that a business rival is not in business entirely from philanthropic motives you no longer are required to keep that information carefully concealed.

GOOD NEWS FROM ILL.—A letter from Assumption in central Illinois reads like music—150-200 autos in a single train on the Wabash rolling through Decatur. Westbound No. 89, often with 25 or 30 trailers in addition to the autos, headed for St. Louis and the Southwest. PRR's TT4 hot-shotting through Vandalia—a solid train of trailers. Similar beautiful sights are on view on the NKP and NYC—so the letter reads.

It's from Charles Huffer, who also encloses an editorial from "The Decatur Review" commenting on James Hoffa's political campaign to prohibit piggybacking. The editorial sees Mr. Hoffa correctly, as an opponent of progress and economy—and doubts that he will succeed. (I myself do not underrate Mr. Hoffa, nor the powers of persuasion of an organization with over a million members.)

PLENTY TO READ—A new and exciting book has just come in — it's "Transportation Engineering" by Professor W. W. Hay of Illinois. It is an up-to-date treatise on comparative technological and economic efficiency of the several forms of transportation. I have only started in on it, but I know from what I've seen so far that it's going to be a useful handbook.

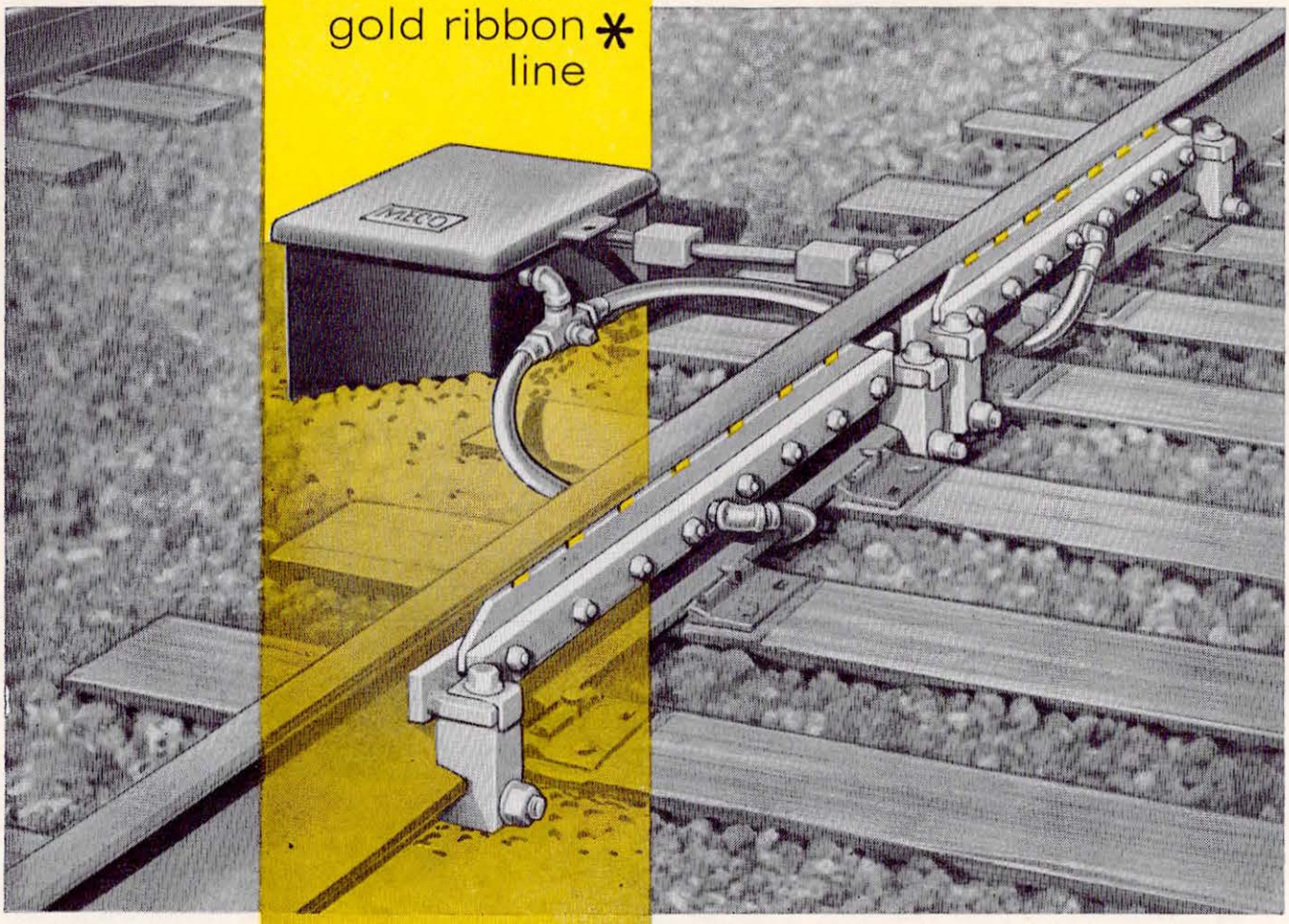
I am still working away on the 732-page Doyle report to the Senate Committee on Interstate Commerce, some of the screwy notions on rate regulation in which, I note, the barge carriers are already trying to force the ICC to adopt. This report, to my way of thinking, is a curious mixture of wheat and chaff. The most interesting original contribution I've found in it (and highly significant) is the disclosure that "total social investment per ton-mile" in transportation facilities almost doubled from 1946 to 1959. In other words, the government's extravagant outpouring of money on transportation plant is not paying off.

SPECIFY

MECO

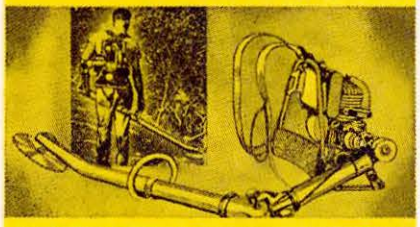
new model MC rail and flange LUBRICATORS

the gold ribbon * line



the MECO gold ribbon line includes:

COST-CUTTING POWER RAIL LAYER



HIGH-SPEED BRUSHCUTTER

MACK, REVERSIBLE SWITCH POINT PROTECTOR

Y-695

gives dependable care-free lubrication everywhere it's needed, automatically

In modern railroading *every*where includes; grades, switch points, guard rails and running rails, as well as curves — *Every*where that friction-forces are at work, new "advanced design" MECO lubricators will reduce friction to a whisper. *Quadruples* the life of rails and wheel flanges!

MECO lubricators cost less to install—Attach to standard rail without special preparation. Once installed, a wheel-activated mechanism dispenses just the right amount of grease through the even-flow distributing bars directly to the rail and wheel flange for waste-free, care-free lubrication, automatically.

Ask one of our men to give you the extra-profit facts on the "gold-ribbon" MECO lubricator. Or write direct for full information.

MECO *Maintenance Equipment Company*

* a standard of quality, value, performance and service

RAILWAY EXCHANGE BLDG., CHICAGO • DIVISION OF POOR & COMPANY

New Product Ideas for the

Pot-Type Switch Heater

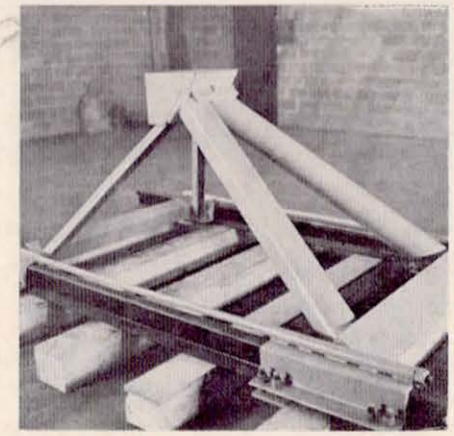
The melting of snow at switches is the purpose of a new kerosene-burning heater designated the Snow Queen. Depending upon the length of the points, a number are placed between the ties under each switch point for heating it sufficiently to melt the snow. It is equipped with a braided wick and a fuel tank holding nine quarts, which will give from 30 to 45 hr burning time. *Bethlehem Steel Company, Dept. RA, Bethlehem, Pa.*

Hy-Rail Equipment

Manually operated Hy-Rail equipment for station wagons and ½- and ¾-ton trucks has been improved. The manufacturer states that adjustment of guide-wheel gage and alinement is easier, and that the operating mechanism is simpler. In addition, the weight has been reduced. As before, the wheel load is applied through an adjustable rubber-cushion torque unit, *Fairmont Railway Motors, Inc., Dept. RA, Fairmont, Minn.*

Speed Swing Attachments

Three attachments have been developed as optional equipment for the Model 441 Speed Swing. These include a 12-ft hydraulic backhoe, a 30-in. magnet and flanged wheels. The backhoe is available with two buckets, one 18 in. wide and the other 24 in. wide with ⅜- and ½-cu yd capacities, respectively. The magnet is energized by a 5-kw generator powered by a gas engine. *Pettibone Mulliken Corporation, Dept. RA, 4700 Division St., Chicago 51.*

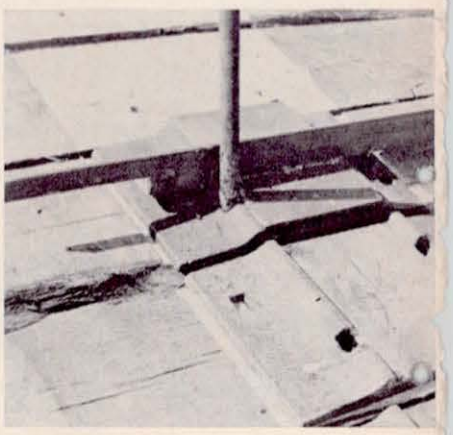


Bumping Posts

Ease of installation is a feature claimed for two new bumping posts. One is a heavy-duty post (shown above) which contacts three crossties and has heavy side rods which tie the compression and tension anchorage together. Its tubular compression members increase strength while decreasing weight. The other post, designated "Econo," has many features of the heavy-duty post. *The Nolan Company, Dept. RA, Bowerston, Ohio.*

Ditching Machine

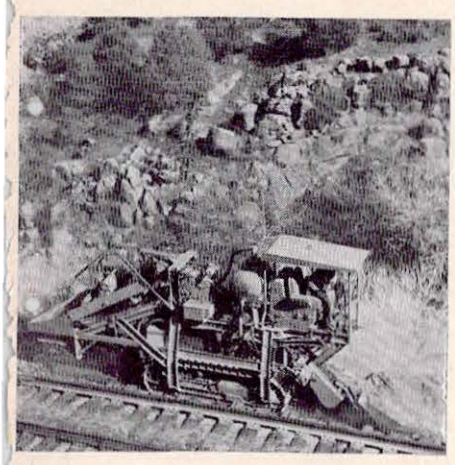
Utilizing the same car body and deck machinery as used on the Model 40 Burro crane, the manufacturer has added a dipper stick and bucket to develop a ditching machine. A new clutch also was added to provide the crowding and retracting actions required for the dipper stick. Designated the Model 40 Ditcher, this unit is equipped wth a ¾-cu.-yd bucket. *Cullen-Friestedt Company, Dept. RA, 1300 Kilbourn St., Chicago 23.*



Tie-Plate Adhesive

A technique has been developed by the Rail Joint Company, working in conjunction with the Armstrong Cork Company, for bonding tie plates to ties at treating plants prior to preservative treatment. The process utilizes an epoxy-base adhesive, known as Bondarc TP, which is placed on the prepared surface of the tie, after which heated plates are set at proper gage. *Rail Joint Company, Dept. RA, 50 Church St., New York 7.*

Engineer

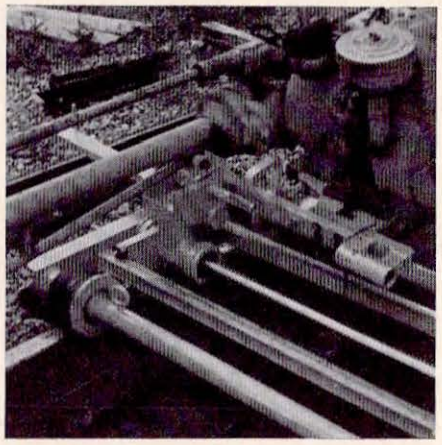


Improved Ballast Cleaner

Cleaning speeds of from 900 to 1,500 ft per hr are now possible with the McWilliams Super Mole shoulder ballast-cleaning machine by the inclusion of a more powerful motor. Propulsion motors, digging and gathering heads, main conveyor and eccentric shaft for the cleaning screen and the dirt belt conveyor are now all hydraulically driven in this improved model. *Railway Maintenance Corporation, Dept. RA, Pittsburgh 30, Pa.*

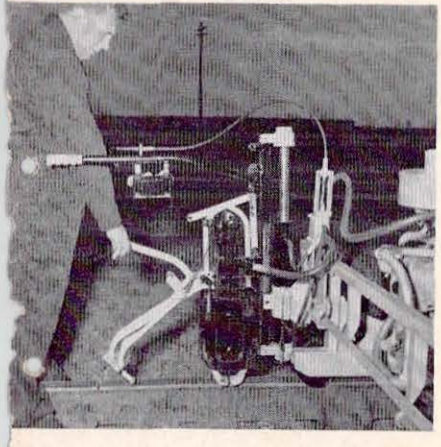
Battery Box

Intended especially for use with switch-lamp lighting batteries is a new battery box molded from triple-ply fiberglass. Weighing 10 lb, the box is said to be non-corrosive and built for durability, The cover is 1½ times thicker than the box. All types of air-polarized batteries now used for switch-lamp lighting may be housed in this box. *The Primary Battery Division, Thomas A. Edison Industries, Dept. RA, Bloomfield, N.J.*



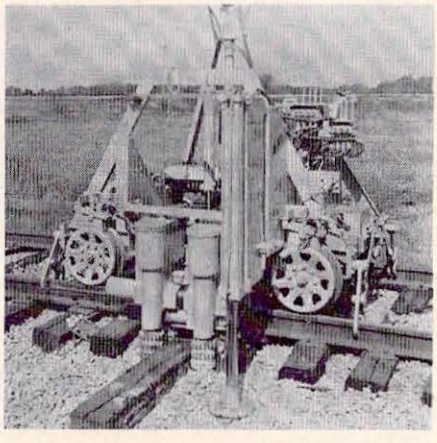
Track Wrench Attachment

By removing the outboard axle assembly and mounting the RTM 750 Transverse Carrier, the operating head of the RACO Model C track wrench can be moved from one rail to the other without changing the position of the machine. The release of a locking pin permits the head to be slid over to the other side where it locks in place automatically. *Railroad Accessories Corporation, Dept. RA, 405 Lexington Ave., New York 17.*



Spike Driver

One-man operation in setting, starting and driving track spikes is claimed for the SDF spike driver. The operator places a spike in a feeder attachment, transmits it by lever to a holder positioned over a tie-plate hole, then starts and drives it with an air hammer. The driving assembly is hung on a transverse carriage so spikes can be driven on either side of both rails. *Tamper, Inc., Dept. RA, 85 Margaret St., Plattsburgh, N.Y.*



Tie-Renewal Machine

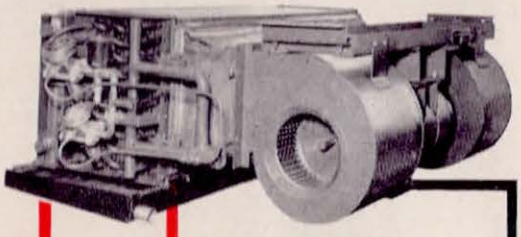
The Matisa dual-purpose tie-renewal machine incorporates a hydraulic track jack and rail clamps in the 1961 models. With the new units, the self-propelled machine will remove and insert ties while lifting the rails above the tie-plate shoulders. Jack and clamps all swing clear when the dual-purpose machine is moving along the track. *Matisa Equipment Corporation, Dept. RA, 1020 W. Washington Ave., Chicago Heights, Ill.*

Snow Cleaner

An attachment for the Ballast Regulator has been made available for sweeping snow out of switches. It has been designated Model 2FBC-A Snow Switch Cleaner. It sweeps the snow with rubber-covered steel cable brushes into an auger-type snow blower, which discharges the snow on either side of the track or into a low car or dump truck. *Kershaw Manufacturing Company, Dept. RA, 2205 W. Fairview Ave., Montgomery 1, Ala.*

MORE NEW PRODUCTS ON PAGE 31

KEEP YOUR CARS ROLLING AND COOL WITH "SAFETY" AIR-CONDITIONING SYSTEMS

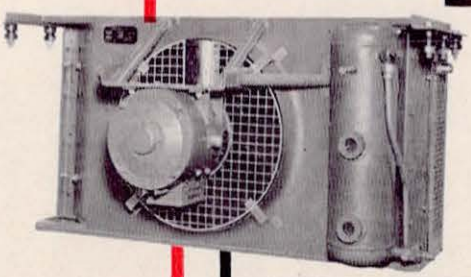


"SAFETY" OVERHEAD EVAPORATOR UNIT

"SAFETY" DIRECT DRIVEN COMPRESSOR

"SAFETY" MOTOR CONTROL PANEL

"SAFETY" AIR COOLED CONDENSER



"SAFETY" insures your railroad that our equipment will supply you with adequate and dependable air-conditioning in every car installation . . . under all weather conditions. Included in every "SAFETY" air-conditioning system are:

- direct driven compressor
- evaporative or air-cooled condenser
- overhead evaporator unit
- motor control panel

No air-conditioning system can perform more efficiently and dependably than its motor and its related controls. We design our "SAFETY" Air-Conditioning Motors expressly for use on the nation's railroads. This insures greatest possible dependability . . . with economical low-wattage consumption (unlike equipment designed for general commercial use).

"SAFETY" Control Panels are compact, simplified. They start the compressor motor and they keep it running efficiently . . . and dependably! You'll be safe with "SAFETY"! In addition to standard Air-Conditioning equipment, "SAFETY" has a complete line of component and package-type air conditioners designed for special types of cars and conditions. May we send you further information? No obligation on your part, of course.

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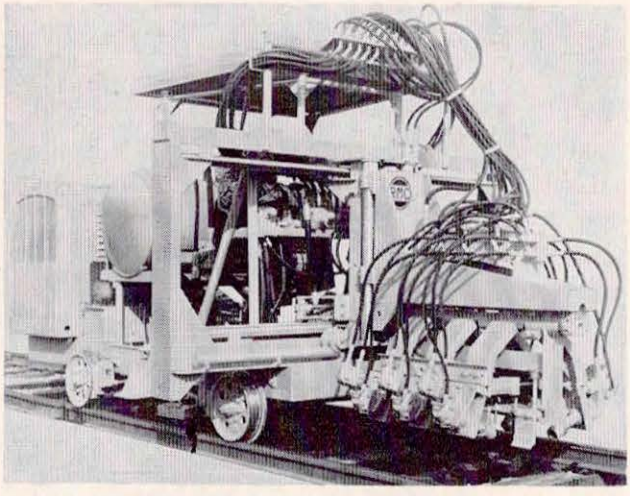
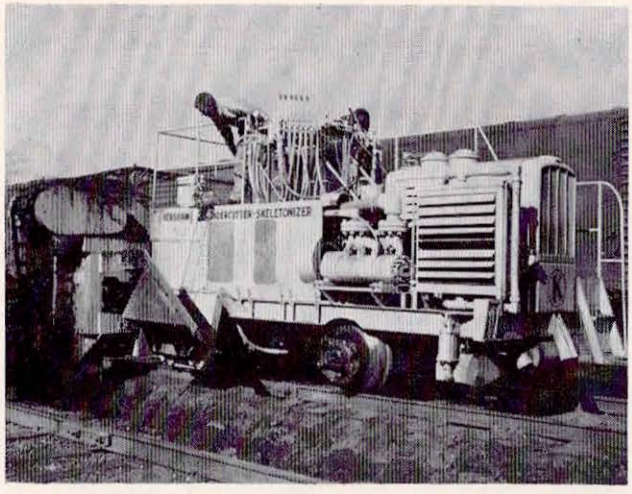
"SAFETY PRODUCTS INCLUDE: Air-Conditioning Equipment • Genemotors • Generators • Fans • Regulators • Blower Units Switchboards • Motors • Motor Alternators • Dynamotors • Motor Generators • Dual Voltage MG Sets

New Product Ideas (*Continued from page 29*)



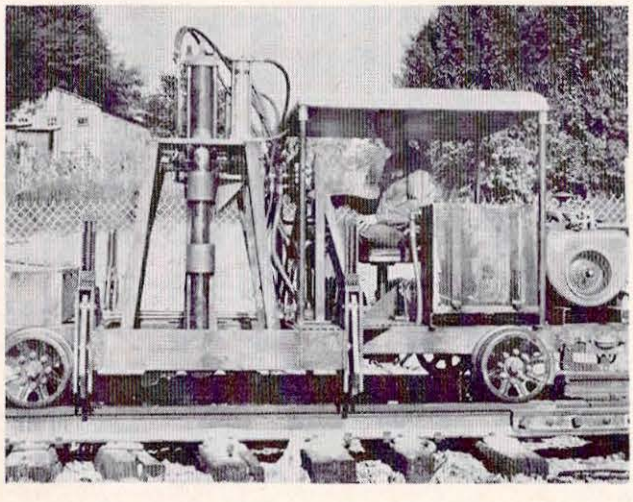
Hydraulic Track Wrench

The RMC BoltMaster is an on-track machine which will tighten or remove all bolts in a rail joint simultaneously. The six hydraulic torque wrenches are mounted on a head that can be swung from one rail to the other. The bolt spindles, adjustable for different bolt centers, may all be operated at the same time from a master control or separately from individual controls. *Railway Maintenance Corporation, Dept. RA, Pittsburgh 30, Pa.*



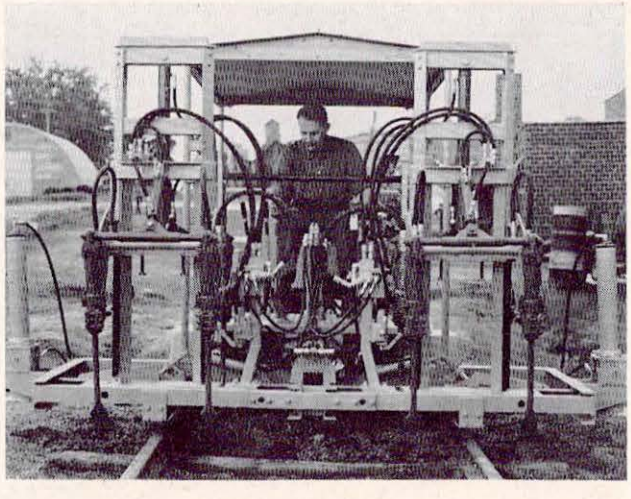
Track Undercutter

Powered by a diesel engine, the Kershaw Model IFU-D Undercutter-Skeletonizer utilizes a hydraulically driven main cutter chain for extruding ballast from beneath the track. The cutter chain is supported in three mounting positions by pantograph-mounted work heads. It accommodates various lengths of ties and side clearances in tunnels. *Kershaw Manufacturing Company, Dept. RA, 2205 W. Fairview Ave., Montgomery 1, Ala.*



Tie Shear

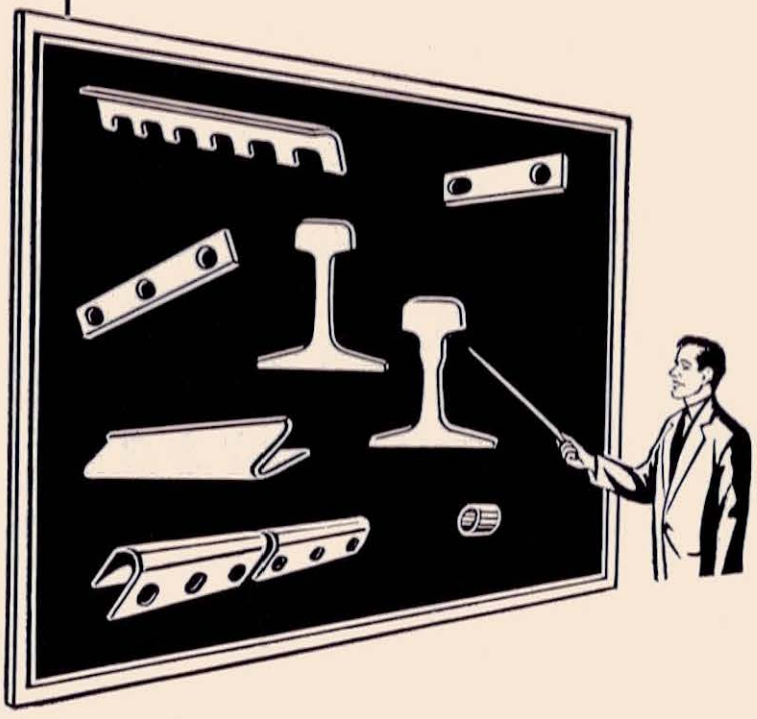
Failed crossties can be removed from the track without disturbing the track surface by a machine designated the Tie Shear. This is a self-propelled unit which cuts the tie inside the tie plates of both rails, picks up the severed inside portion and carries it forward before dropping it. A hydraulic-ram assembly then forces the tie butts from beneath the rails. *Fred W. Holstein Co., Dept. RA, Hopatcong, N.J.*



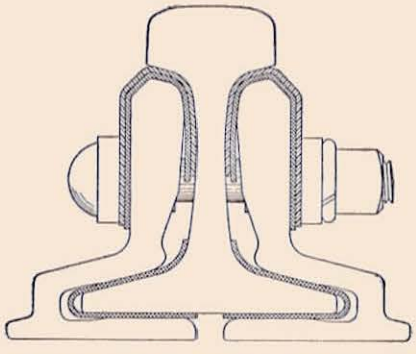
Tamping Machine

A new tamper, known as the Fairmount W110 Series A, has been developed. It is equipped with eight air guns that are hydraulically controlled for tilt and for vertical and lateral movement. There are four guns on each side. The machine is equipped with hydraulic jacks and rail clamps for jack tamping. A hydraulic jack is provided for setoffs and turnarounds. *Fairmont Railway Motors, Inc., Dept. RA, Fairmont, Minn.*

MORE NEW PRODUCTS ON PAGE 33



Here are the features only RAJO Fibre Renewals can offer...



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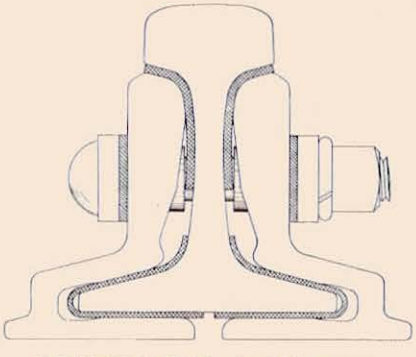
- Fabricated from the highest grade of vulcanized fibre.
- Shaped from master dies to guarantee accuracy and fit.
- Rigidly inspected by a competent inspection department.
- Quick delivery on all orders.
- Field service by trained personnel without obligation.



CONTINUOUS INSULATED JOINT

AN ADDED CONVENIENCE:

RAJO Fibre Renewals are now available in packaged sets. Each carton contains all components necessary to recondition an insulated joint.

Packaging simplifies handling and installation problems, resulting in greater economy and peak performance of your insulated joints.

RAIL JOINT COMPANY
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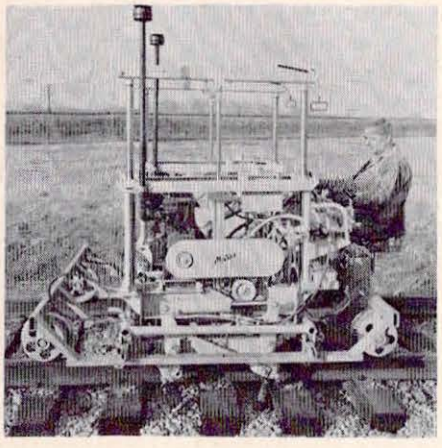
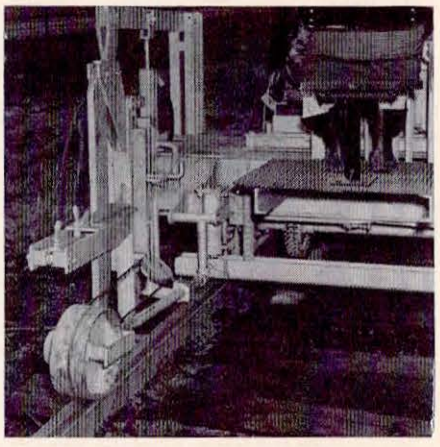
50 CHURCH ST. NEW YORK 7, N. Y.

New Product Ideas (*Continued from page 31*)



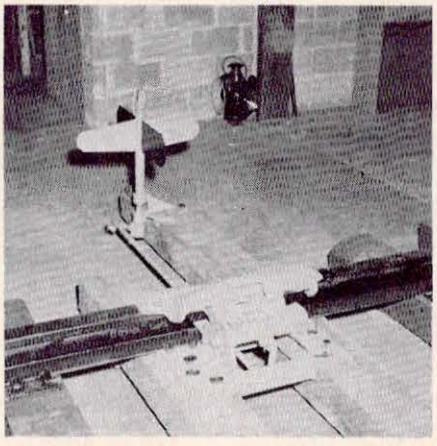
Light Tamper

Hydraulically controlled tamping tools work simultaneously in parallel on both rails with a new light self-propelled tamper. Two separate valves operating on independent hydraulic systems control the compaction as well as the depth. This allows a sufficient number of "depth-density" combinations to satisfy all leveling and raising requirements. *Matisa Equipment Corp., Dept. RA, 1020 W. Washington Ave., Chicago Heights, Ill.*



Indicator for Tie Spacer

A device for indicating a predetermined distance between ties has been made available as an attachment for the P-S Tie Spacer. It consists of a belt-driven indicator pulley that is turned by a wheel engaging the rail. The diameters of the wheel and pulley are such that one-half revolution of the pulley is equivalent to 19½ in. of horizontal distance. *Pullman-Standard, Track Equipment Department, Dept. RA, 1414 Field St., Hammond, Ind.*



Derails and Stands

A new hinged derail (shown above) and a sliding-type derail have recently been made available. The hinged derail is adjustable for fitting any rail section and comes complete with target post and rod. Provision has been made for padlocking.

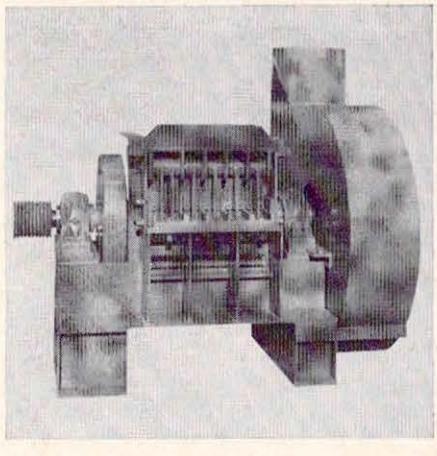
The sliding derail, complete with stand, is made of electric-cast steel. It is said to provide easy operation and quick lubrication. *The Nolan Company, Dept. RA, Bowerston, Ohio.*

Super Jack-All

The Kershaw Model 3GC-A Super Jack-All is available with a new and improved manual tamping control system. This hydraulically controlled and operated combination jack and tamper is adapted for use with the Kershaw Telescope Track Surfacer or wire-type or other eye-level surfacing device. Optional equipment includes a new automatic electronic cross level. *Kershaw Manufacturing Co., Dept. RA, 2205 W. Fairview Ave., Montgomery 1, Ala.*

Truck-Mounted Crane

A hydraulic crane which turns a full circle can be mounted on any truck with a curb weight of 5,500 lb or more, a minimum cab-to-axle distance of 84 in., and a frame section modulus of 15. It mounts in from 14 to 17 in. of space between the cab and truck bed. It has hydraulic outriggers integral with the crane frame to stabilize the unit and prevent damage to the frame or springs. *Teale & Co., Dept. RA, P.O. Box 605, Omaha, Neb.*



Removed-Tie Disposer

Failed crossties removed from the track can now be ground up by a machine called the Blo-Hog. The chips are blown out on the ground to rot. This unit is mounted on a small car having a diesel-engine drive. The ties are placed on an elevating conveyor, carried up and fed into the Blo-Hog and the chips blown to either side of the right of way from a swivel elbow. *Jacksonville Blow Pipe Company, Dept. RA, Jacksonville, Fla.*

Complete AREA Program—1961

E. J. BROWN
President
American Railway
Engineering Assn.

KENNETH CAVINS
President
National Railway
Appliances Assn.

McCORMICK PLACE—CHICAGO

TUESDAY MORNING, March 7, 9:30 to 12—Banquet Room

President E. J. Brown's address.
Reports of Executive Secretary N. D. Howard and Treasurer A. B. Hillman.
"Railroad Engineering in Competitive Transportation"—C. D. Buford, vice president, operations and maintenance department, AAR.
"Research—Here and Abroad"—W. M. Keller, vice president research, AAR.
"Mariners and High Hats"—Motion picture of Salt Lake fill project—H. M. Williamson, chief engineer, SP.

TUESDAY AFTERNOON, 1:30 to 5:30—Banquet Room

Committee Reports
Contract Forms
Engineering and Valuation Records
Clearances
"The Future of Track Maintenance on British Railways"—A. N. Butland, chief civil engineer, British Railways.
Waterways and Harbors
Water, Oil and Sanitation Services: "Control of Diesel Fuel Oil Spillage—Results Obtained from Use of Automatic Shut-Off Fueling Nozzles"—V. C. Barth, chief metallurgist and engineer of tests, C&NW.
Yards and Terminals
"The Neff Yard Project"—Motion picture of the MP at Kansas City.
Economics of Railway Location and Operation—Motion Picture "The Better Way" showing the construction of Santa Fe's line change in Arizona.
"Observations Made on My Recent Trip Behind the Iron Curtain"—F. R. Woolford, chief engineer, WP.

WEDNESDAY MORNING, 9:00 to 11:55—Assembly Hall

Reports of Committees
Cooperative Relations with Universities—"The 1961 Civil Engineering Graduate"—Prof. K. B. Woods, dept. civ. engrg., Purdue Univ.
Wood Bridges and Trestles—"Epoxy Resins—A new Tool for Railroads"—Dr. W. J. Belanger, tech. dir., resin devel. Jones-Dabney Co.
Masonry—"New Shapes in Concrete for Tomorrow's Railroads"—J. D. Piper, v.p. promotion, Portland Cement Assn.
Impact and Bridge Stresses
Iron and Steel Structures—"Design and Fabrication of a Welded Rigid-Frame Railroad Bridge"—J. P. Jaso, wldg. engr., Lincoln Electric Co.
Waterproofing

WEDNESDAY NOON, 12:00—Banquet Room

Annual Luncheon
Results of election of officers
"The Railroads Look to the Future"—H. C. Murphy, pres., Burlington Lines.

WEDNESDAY AFTERNOON, 2:15 to 5:30—Assembly Hall

Reports of Committees
Highways
Electricity
Buildings
Wood Preservation
Ties—"Said the Tie Man to the Track Man"—D. B. Frampton, Jr., vice president of D. B. Frampton & Co. and past president of the Railway Tie Association.
Economics of Railway Labor—"Economics of Present-Day Track and Structures Maintenance"—C. J. Henry, ch. engr., PRR.
Maintenance of Way Work Equipment—"Mechanized Loading and Unloading of Crossties on the Santa Fe"—Motion picture—Commentary by G. E. Roberts, asst. engr., AT&SF.

THURSDAY MORNING, 9:00 to 12:30—Banquet Room

Reports of Committees
Roadway and Ballast—"Current Research on Right-Of-Way Brush Control Problems"—W. E. Chappell, prof. of plant physiology, Va. Agri. Experiment Station.
Track—Motion Picture—"Mirror of German Federal Railways"
Rail—"The Effect of Heavy Wheel Loads on Rail—As Observed on the QNS&L"—G. M. Magee, dir. engrg. res., AAR, Special Committee on Continuous Welded Rail—"Laying Continuous Welded Rail on the Santa Fe's 44-Mile Line Change in Northern Arizona."

NRAA EXHIBIT

More new railway machines and equipment—more improved products and services—will be seen by railroad men this year than at any previous exhibit sponsored by the National Railway Appliances Association.

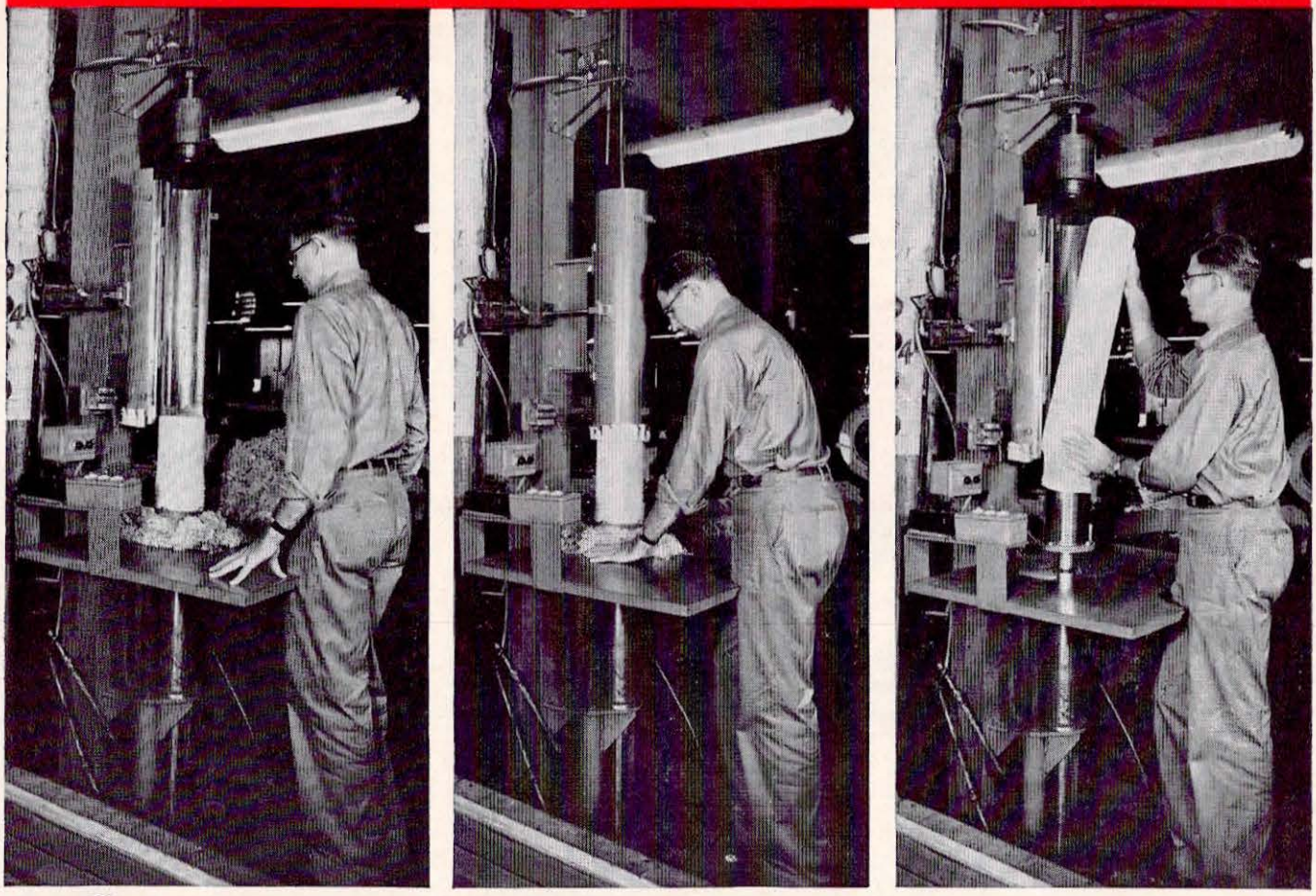
Doors will open—from 8:30 a.m. to 5:00 p.m. on Monday, March 6—onto an area of more than 100,000 sq ft on the upper level of McCormick Place where the vast array of equipment will be housed. On March 7 and 8 the exhibit hours will be 8:30 a.m. to 5:30 p.m. and on March 9 from 8:30 a.m. to 1:00 p.m.

Some exhibitors have been working feverishly for months to get new products ready for unveiling at this show. In some instances, this turned out to be a very close race—the pilot models being rushed directly from the machine shop to the exhibit floor.

WE'LL BE THERE TOO!

Drop in to join the Railway Age staff at the Simmons-Boardman "Coffee Bar"—8 to 9:30 each morning—just inside the main entrance of the exhibit hall and to the right. Come and meet your friends.

WIX RESEARCH FINDS THE BETTER FORMULA · · · WIX-BUILT MACHINES FORM THE BETTER FILTER!



WIX Series 4LM, 4129, 12700, 12800 and 12900M are now packed by the controlled density method.

WIX has advanced the filtration of Diesel Fuel and Lubricating Oil a giant step with filter cartridges wherein precise control of weight, density and dimensions provide an entirely new standard of performance. These new WIX cartridges represent an important contribution to operating economy and preventive maintenance. This family of advanced type cartridges is now available for all your diesel locomotives. Get the facts today!

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WIX Corporation, Dept. RA
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Please send us full information on your controlled density Filter Cartridges.

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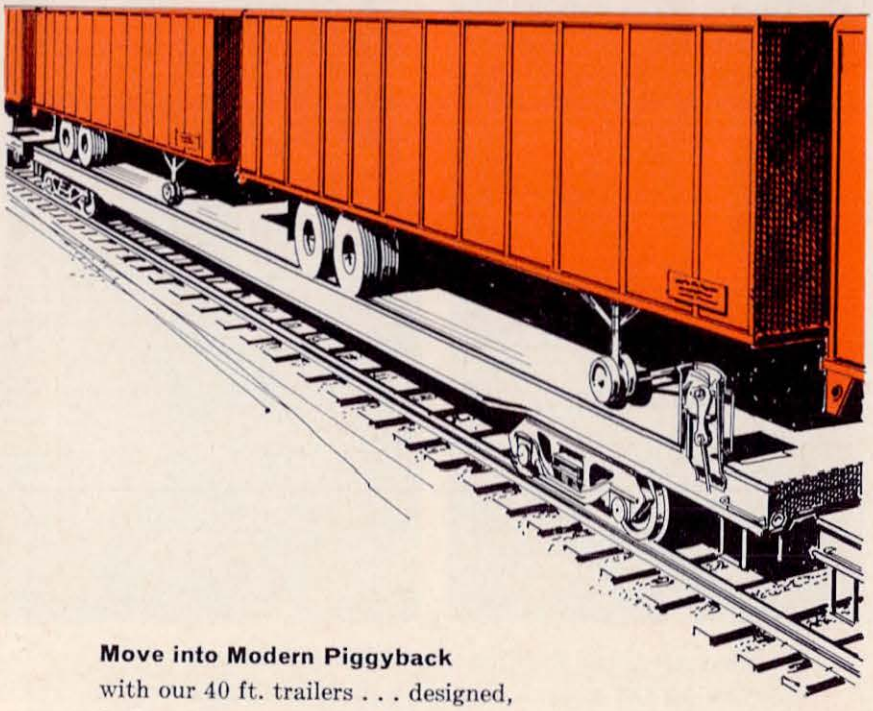

Move into Modern Piggyback
with our 40 ft. trailers . . . designed, built and proven for the job! These modern hi-cube trailers offer maximum volume and utilization. Their reinforced construction takes the punishment of piggyback movement.

Whether you need 5 or 500, Piggyback Leasing Corp. has 'em ready now. Realistic leasing plans. Communicate with—

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134 North La Salle Street, Chicago 2, Illinois
CEntral 6-1962

Letters from Readers

'Grab Bag'

Savannah, Ga.

To the Editor:

I think the cover of Railway Age for the week of Jan. 23 is one of the most striking—in truth if nothing else—that I have ever seen on a magazine devoted to railroads.

The truths pointed out as dwelling so comfortably in the railroads' "Grab Bag" are so painfully evident that I think we can truly say that we are concerned with a unique industry.

Ronald L. Coleman
Editor, "The Right Way"
Central of Georgia

Premature

St. Louis, Mo.

To the Editor:

On page 30 of the January 9 issue of Railway Age there is an article headed "Additional Roads Adopt Standard RR Wrist Watches" to the effect that Elgin had recently announced approval of the wrist watch by this company.

Please be advised that this information is incorrect. It is true we are giving consideration to doing so. However, we have as yet neither approved nor adopted as standard this wrist watch.

L. W. Menk
Vice President-Operation, Frisco

Dividends Declared

CHICAGO GREAT WESTERN.—common, 25¢, reduced, payable April 7 to holders of record March 20; 5% preferred, 62½¢, quarterly, payable March 31 to holders of record March 20.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—5% non-cumulative preferred, series A, $1.25, quarterly, payable March 30, June 29, Sept. 28 and Nov. 30 to holders of record March 10, June 9, Sept. 8 and Nov. 10, respectively.

DELAWARE & BOUND BROOK.—50¢, quarterly, paid Feb. 20 to holders of record Feb. 13.

DENVER & RIO GRANDE WESTERN.—25¢, quarterly, from net income for 1960, payable March 20 to holders of record March 3.

GULF, MOBILE & OHIO.—reduced, 37½¢, payable March 13 to holders of record Feb. 24.

KANSAS CITY SOUTHERN.—common, $1, quarterly, payable March 15 to holders of record Feb. 28; 4% non-cumulative preferred, 50¢, quarterly, payable April 15 to holders of record March 31.

NORTH CAROLINA.—7% guaranteed, $3.50, semiannual, payable Aug. 1 to holders of record July 21.

NORTH PENNSYLVANIA.—$1, quarterly, paid Feb. 25 to holders of record Feb. 17

PITTSBURGH, FORT WAYNE & CHICAGO.—7% preferred, $1.75, quarterly, payable April 4 to holders of record March 10.

PITTSBURGH, YOUNGSTOWN & ASHTABULA.—7% preferred, $1.75 quarterly, paid March 1 to holders of record Feb. 20.

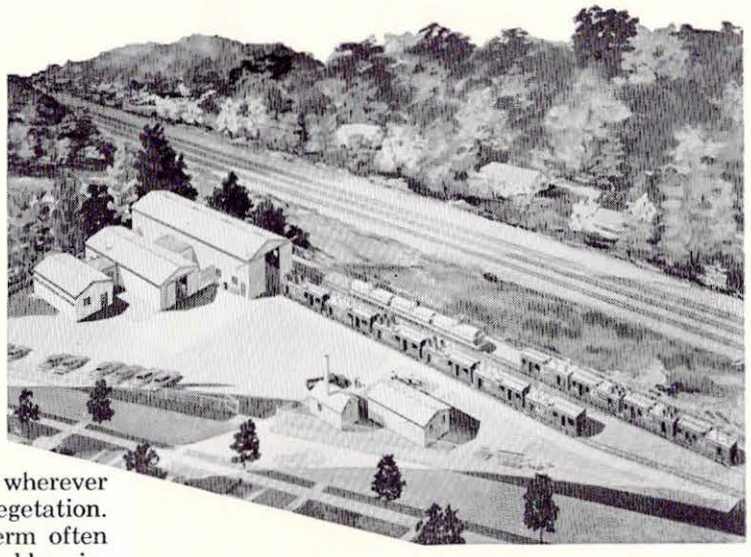
RICHMOND, FREDERICKSBURG & POTOMAC.—voting common, $1, quarterly; dividend obligation $1, quarterly, both payable April 3 to holders of record March 21.

ST. LOUIS-SAN FRANCISCO.—common, 25¢, quarterly, payable March 15 to holders of record March 1; 5% conv. preferred A, $1.25 quarterly, payable March 15, June 15, Sept. 15 and Dec. 15 to holders ot record March 1, June 1, Sept. 1 and Dec. 1, respectively.

SOUTHERN PACIFIC.—28¢, quarterly, payable March 20 to holders of record Feb. 27.

Pre-Emergence Weed Control That Lasts All Year Long

Nalco® H-174® Granular Weed Killer Gives Excellent Control At Low Dosages



This maintenance center keeps Nalco's modern spraying and spreading equipment in tiptop condition for precision application of weed and brush control chemicals. It is one more reason a Nalco program is the most effective way to attack any weed or brush control problem.

Weed control by pre-emergence applications of formulated organic herbicides . . . *in dry, granular form* . . . originated with Nalco. And Nalco's constantly improved soil residual type weed killers still do the job best—in yards, around fences, bridges, and buildings—or wherever you need an area kept clean and free of vegetation. "Broad spectrum" weed control is a term often used to describe H-174 . . . a convenient abbreviation for the fact that it provides a long lasting kill of virtually any type of grass or weed!

Clean, Weed-Free Areas

Pre-emergence treatment with Nalco H-174 kills seedlings when they sprout, prevents the trashy appearance and fire hazard of a stand of dead and dried out weeds. And it saves the labor of cleaning up after weed killer treatment. That's why, although you can apply it any time, the best time to put down Nalco H-174 is just before the weeds come up. Anti-leaching characteristics of the hard, granular formulation assure a residual effect that helps prevent regrowth for a full season . . . and sometimes beyond, thus lowering dosage requirements in succeeding years.

Low Dosage = Less Labor, Storage

Nalco H-174 contains a powerful active ingredient, made even more effective by using it in this *dry* carefully-sized granule form. The small granules drop right to the soil, attack vulnerable seedlings or roots. You do a thorough job with less chemical because H-174 delivers *more* killing power at the *best* killing spot. And working with a smaller volume of chemical greatly simplifies application—saves storage space, transportation costs and labor!

NEW self-propelled spreaders for Nalco H-174 weed killer speed up application in yards and other areas.

Now Is the Time for Action

Early-season action on weed control with Nalco H-174 gives you year-long protection, and extra fair-weather time for other maintenance work. Your Nalco Representative will be glad to help you get a prompt start. Call him, or write to Nalco for help with any weed or brush control problem.

Chemicals and Services to Fit All Your Needs

How should you approach a weed control problem? Look for a program. Choose the source that will give you a vegetation survey and pre-season planning; offers a wide selection of weed and brush killers (almost any you can name!) for any soil, climatic and vegetation condition; includes efficient spreading and spraying equipment; has trained personnel to supervise application; and provides post-season evaluation reports. Only Nalco makes it all available in a package that will deliver best possible weed control for the budget you command.

NALCO CHEMICAL COMPANY

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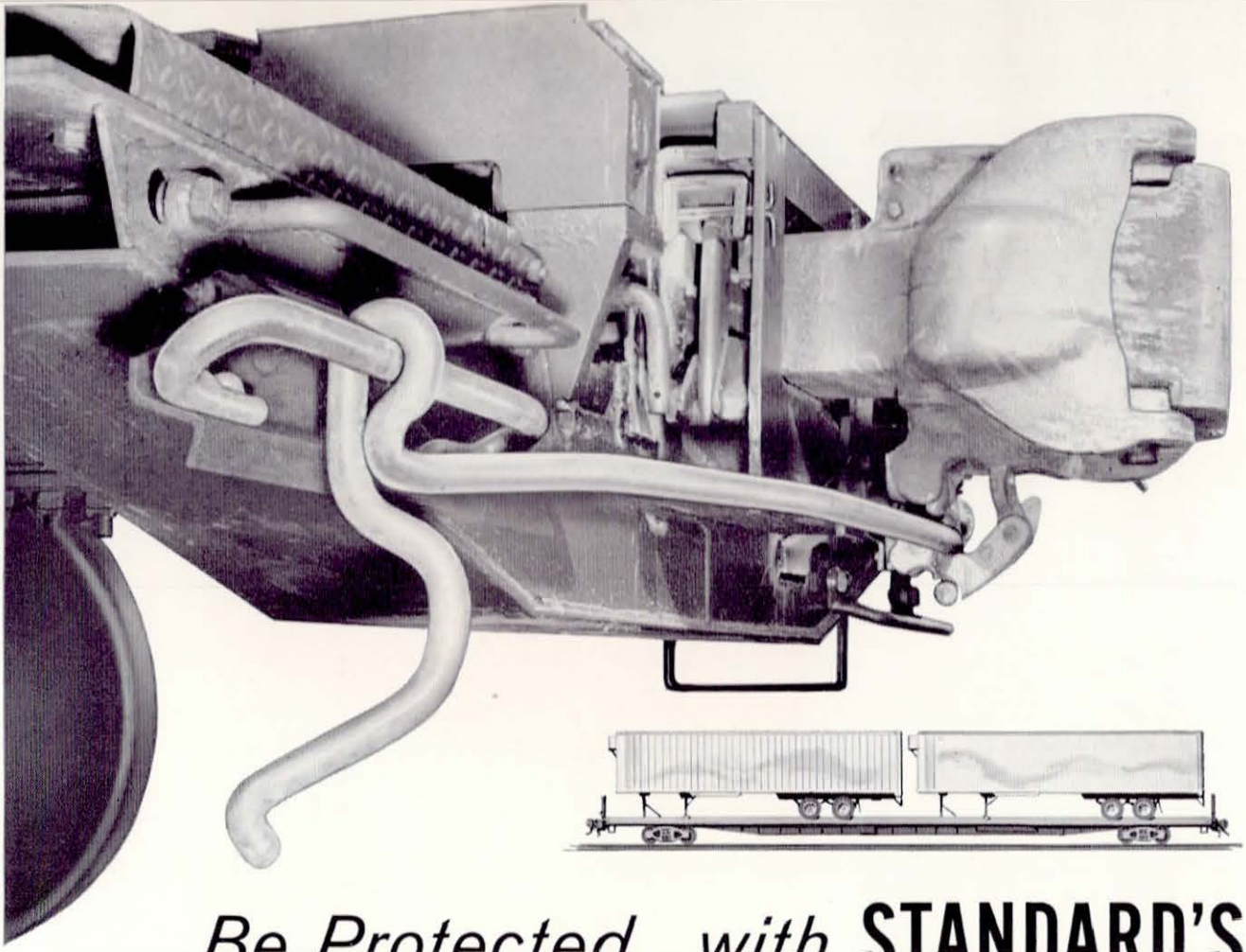

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Standard's New and Improved Coupler Device does the job right.

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And this uniform clearance is maintained on couplers used with long travel draft gears, cushion underframes and wide opening strikers—as well as standard underframe conditions.

The Standard *New* and *Improved* Coupler Device provides greater protection against train separations—eliminates any possibility of the operating rod eye rotating the locklift lever towards lock set position.

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For complete information, write or contact your *Standard Railway representative, Hammond, Indiana.*

STANDARD RAILWAY EQUIPMENT

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CHICAGO, ILLINOIS • NEW YORK, NEW YORK • SAN FRANCISCO, CALIFORNIA

MARKET OUTLOOK *at a glance*

Carloadings Drop 6.7% Below Previous Week's

Loadings of revenue freight in the holiday week ended Feb. 25 totaled 468,482 cars, the Association of American Railroads announced on March 2. This was a decrease of 33,852 cars, or 6.7%, compared with the previous week; a decrease of 85,400 cars, or 15.4%, compared with the corresponding week last year; and a decrease of 106,852 cars, or 18.6%, compared with the equivalent 1959 week.

Loadings of revenue freight for the week ended Feb. 18 totaled 502,334 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, Feb. 18

District	1961	1960	1959
Eastern	72,929	91,562	91,803
Allegheny	82,886	107,426	104,194
Pocahontas	42,523	44,343	49,808
Southern	104,304	106,894	115,859
Northwestern	55,126	63,161	63,453
Central Western	100,483	110,207	111,582
Southwestern	44,083	46,506	47,042
Total Western Districts	199,692	219,874	222,077
Total All Roads	502,334	570,099	583,741
Commodities:			
Grain and grain products	55,814	48,519	54,595
Livestock	2,813	3,297	3,715
Coal	95,422	96,489	110,054
Coke	5,318	11,093	9,873
Forest Products	35,308	38,506	38,101
Ore	13,374	21,949	16,105
Merchandise l.c.l.	30,733	38,433	43,408
Miscellaneous	263,552	311,813	307,890
Feb. 18	502,334	570,099	583,741
Feb. 11	486,347	580,150	567,188
Feb. 4	497,630	587,981	565,752
Jan. 28	476,403	603,195	582,456
Jan. 21	490,049	587,407	555,750
Cumulative total, 7 weeks	3,408,166	4,124,426	3,991,895

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended Feb. 18 totaled 10,028 cars, compared with 10,719 for the corresponding 1960 week. Loadings for 1961 up to Feb. 18 totaled 68,996 cars, compared with 69,870 for the corresponding period of 1960.

IN CANADA.— Carloadings for the seven-day period ended Feb. 14 totaled 60,132 cars, compared with 60,823 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
Feb. 14, 1961	60,132	66,128
Feb. 14, 1960	25,835	30,500
Cumulative Totals		
Feb. 14, 1961	369,976	157,279
Feb. 14, 1960	401,744	186,068

New Equipment

SPECIAL

► *Bolivia.*—Will admit railroad materials, spare parts and equipment duty free for the remainder of 1961.

New Facilities

► *Alaska.*—Projects scheduled for 1961 include ballasting, surfacing and tie renewal on 17.3 miles of track (including sidings) at an estimated cost of $281,500; and paving of storage areas at Seward Dock, $60,000.

► *Canadian Pacific.*—Ordered CTC equipment from Union Switch & Signal Division of WABCo. for installation between Moose Jaw and Indian Head, Sask., 84 miles.

► *Central of Brazil.*—Ordered CTC equipment from Union Switch & Signal Division of WABCo. for installation between Cruzeiro and Sao Jose do Compos, 76 miles.

► *Chicago Transit Authority.*—Will open bids March 9 for a $4,000,000 project to elevate a two-and-one-half mile section of its Lake Street rapid transit route between Chicago and Oak Park, Ill. (RA, Jan. 9, p. 31). Half of the construction costs will be shared equally by the state of Illinois and Cook County; Oak Park will contribute $800,000; and the city of Chicago and CTA will each pay $600,000.

► *Egyptian State Railways.*—Seeks prices and specifications for installation of a dynamotor in the main diesel shop in Cairo. Inquiries should be directed to the U.S. Embassy at Cairo.

► *Tunisia.*—Has invited registered U.S. architects and engineers to compete in preliminary plans for a railroad station to be built in Tunis. Details are available from the Embassy of Tunisia, Economic Section, 2404 Massachusetts Ave., N.W., Washington, D.C.

Financial

► *Erie-Lackawanna.*—Asked the ICC to guarantee a $15,000,000 loan to finance improvements charted when the Erie and the Lackawanna merged. Principal among these: a $7,500,000 electronic freight yard at Buffalo; improvements at Hoboken and Jersey City, N.J., to coordinate freight-handling operations in New York harbor; extension of sidings and installation of modern signaling devices on the Buffalo division; addition of yard tracks at Hornell, N.Y.; and new piggyback facilities at Chicago and Croxton, N.J.

► *New Haven.*—Asked the ICC for guarantee of an additional $1,500,000 loan. This constitutes the remainder of a $5,000,000 guarantee previously asked of the Commission. On Feb. 14, the Commission issued a guarantee on $3,500,000 of this sum.

Milwaukee Faction Threatens

► **The Story at a Glance: The merger many regard as a "natural" — Chicago & North Western plus Milwaukee — may be the one that touches off the first merger-oriented proxy fight in the current series of rail consolidation moves.**

If it comes, the battle will be over terms of stock exchange. Present planning, it's unofficially indicated, calls for C&NW stockholders to get 1¼ or 1½ shares in the new company for each share of North Western. Milwaukee stockholders would receive new shares on a one-for-one basis.

One group of Milwaukee directors — apparently numbering five of the board's 22 members — won't buy merger on those terms. C&NW shareholders, the group contends, should also trade share-for-share.

Reaction from both the C&NW and Milwaukee managements: Such protests are premature. Terms haven't yet been firmed up.

A unification plan for North Western and Milwaukee will probably go before the two roads' boards of directors for consideration March 16. If it does — and if it's approved on the basis of terms cited by a group of Milwaukee directors — there's a good chance of a proxy fight splitting the Milwaukee board.

J. Patrick Lannan — Chicago investment banker, Milwaukee director and chairman of the executive committee — says his group is "not opposed to the idea of the merger, but we will resist a shotgun marriage."

If the Milwaukee board approves a plan giving North Western stockholders more than a share-for-share exchange, he warns, then "if necessary we'll form a proxy committee and have a proxy fight."

As matters stood last week, Mr. Lannan's group apparently included four other directors: Arthur S. Bowes, chairman of H. M. Byllesby and Co.; Franklin B. Schmick, president of Byllesby; Arthur M. Wirtz and James Norris. Mr. Lannan indicated, however, that he believes still other Milwaukee directors "at a showdown would vote with us."

He said his group "is now in the process of acquiring stock and has been for several weeks . . . We've added substantially to our holdings since the last annual meeting." At present, he said, the group could lay its hands on about 250,000 shares — about 11.7% of the 2,123,000 outstanding shares of Milwaukee common.

Chairmen of both roads — Leo T. Crowley of the Milwaukee and Ben W. Heineman of the North Western — view the dissidents' opposition as premature. Terms, they indicate, haven't been discussed at length or agreed upon. Mr. Crowley noted further that he has no differences of opinion with the Lannan group in getting "what we can for the Milwaukee stock." But, he said, "you have to be reasonable in these dealings to get an agreement with both parties."

Earlier, the five directors in the Lannan group said they were opposing the "heavy-handed way in which the merger is apparently being railroaded" by both managements. Their statement also said they "particularly resent the unreasonable demands and the interference in the negotiations of persons like Harry C. Hagerty, vice chairman of the Metropolitan Life Insurance Company, which owns large sums of senior securities but an insignificant amount of common stock of both railroads."

Mr. Lannan added: "We resent the right of Metropolitan Life to exert this type of pressure, considering its vested interest in both sides of the negotiations."

A top officer of one of the roads, however, denied that pressures in the talks had come from insurance companies.

Thus far, the only public mention of the 1¼- or 1½-to-1 exchange ratio has come from the Lannan group. Neither management has confirmed the report. Asked at a press conference if terms had been discussed at the Milwaukee board meeting Feb. 23, Mr. Lannan answered: "I discussed them."

Initial reports hinted that book value would be the basis for the stock exchange. But, the Lannan group contends, "book value of these roads as of most Class 1 roads today, bears little relation to earning power or realizable value of the properties, but is only a measure of costs expended during an era when the importance of railroads and the value of the dollar were completely different from the present situation."

Share-for-share is the fairest exchange basis for merger, the group says, because "the record of the market action of the two common stocks over a long period of years has been remarkably similar . . . Market value is not only the most equitable basis for merger terms but also, in the case of the proposed Milwaukee-North Western merger, the only feasible yardstick . . . [and] the open market's appraisal of the relative values of the common stocks of the two roads through the years is also confirmed by computations of the relative contributions of the two properties to the probable earnings of the proposed new merged road."

If a plan of merger is brought before the two boards March 16, and if it should win speedy approval, it's conceivable that stockholders would be asked for their vote at the two roads' annual meetings — Milwaukee on May 9, C&NW on May 16. (Terms of seven Milwaukee directors expire this year — among them Messrs. Lannan, Schmick and Norris — but Mr. Lannan indicated that the proxy fight, if it develops, will be concerned with the merger proposal itself and not with election of directors.)

The combination — merger talk and the chance of a proxy fight — isn't unique, where North Western and Milwaukee are concerned. Merger prospects seemed bright once before, in 1955. But a group including Ben W. Heineman, present C&NW chairman, saw better prospects for North Western than the merger talks seemed to promise. C&NW management then was changed, without a proxy fight, and Mr. Heineman became chairman. Merger talks ended early in 1956, as the new management sought to im-

North Western—Milwaukee: How They Compare

	C&NW	MILWAUKEE
Mileage	10,729	10,596
Total operating revenues	$225,089,000*	$230,363,000
Net income	$244,450**	$1,323,063
Employees	17,483	18,640
Common shares outstanding	812,254	2,123,214

*C&NW and M&StL, combined for full year 1960.

**$7,180,145 loss before $7,424,595 gains from sales of land and other special credits. Available net income, as defined in mortgage indentures, was $25,143.

Proxy Fight

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Combined, North Western-Milwaukee would be a 21,325-mile system. From a mileage standpoint, it would be the nation's largest — but from a revenue standpoint, it would rank only sixth among present Class I roads, as the "result of considerable under-utilization of the productive capacity of the two railroads."

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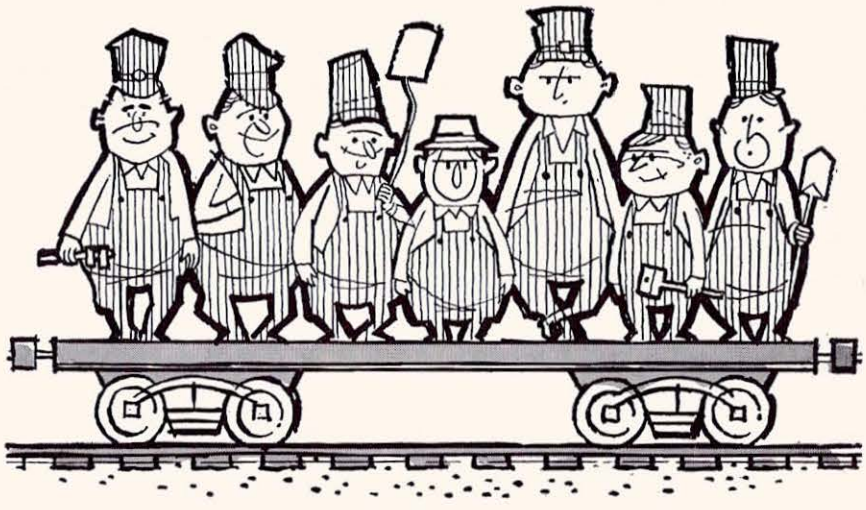

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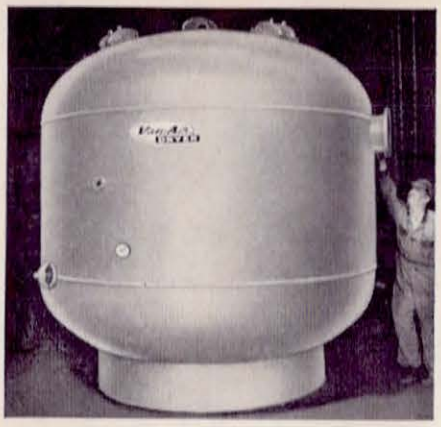

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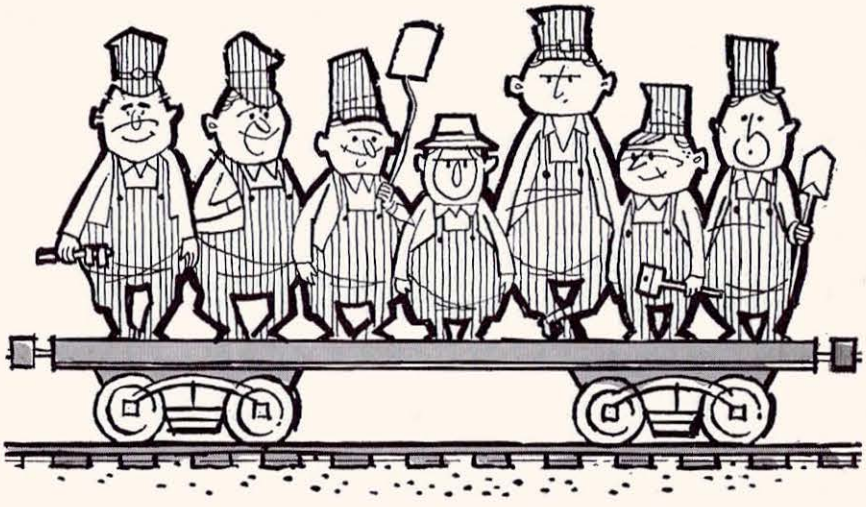

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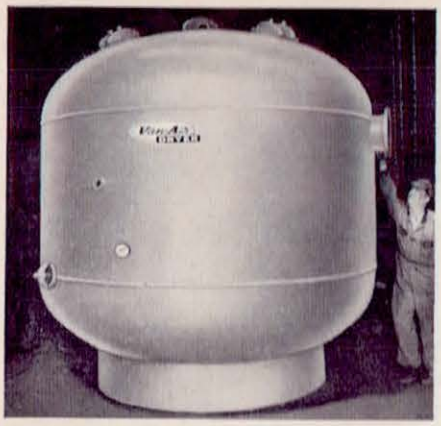

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W. M. Sellards appointed auditor of passenger accounts, Topeka, Kan., succeeding **A. F. Klopfstein,** who retired Feb. 1.

SEABOARD.—**C. L. Saunders, Jr.,** appointed assistant auditor of disbursements, Richmond, Va., succeeding **C. R. Hoggard, Jr.,** promoted.

SOUTHERN.—**T. M. French III,** assistant director, Real Estate and Conveyancing department, Washington, promoted to director of that department. **J. S. Medill** appointed assistant director. **W. A. Broaddus,** real estate attorney, appointed assistant director.

J. T. Urban
D&RGW

Wm. B. Thompson, Jr.
FEC

Frank P. Soen
NYC

Robert P. Underwood
Matisa

TERMINAL RAILROAD ASSN. OF ST. LOUIS.—Charles G. Cross appointed general traffic manager, to succeed **Allen A. Lister,** who retired March 1.

UNION.—Charles T. Pennebaker, secretary-auditor, Memphis, Tenn., retired Feb. 28.

Supply Trade

Robert P. Underwood, vice president and general manager of the **Matisa Equipment Corp.** and of **Matisa Railweld, Inc.,** has been elected president and general manager of both concerns, according to an announcement by **Gilbert Kerlin,** chairman of the board of the Matisa Corporation. Mr. Underwood will continue to have offices in Chicago Heights, Ill.

J. W. Bergen has been appointed assistant vice president in the sales department, **Pullman-Standard.** He was formerly manager of western railway sales, **Symington Division** of **Symington Wayne Corp.**

The Plasser Railway Maintenance Corp. has established a new plant at 700 20th Street, Rockford, Ill. The company states it is now ready to deliver its track-maintenance machines from the new location and that it has also opened a new warehouse for stocking replacement parts. **Emmerich E. Wechselberger** has been named plant and service manager, with offices at the new address.

J. Paul Saunders Co., Bowling Green, Ky., has been appointed representative for **Spray Products Corp.,** Camden, N.J., in Kentucky, Tennessee, Mississippi and Alabama.

L. E. Clark has been appointed sales representative, Western district, **Buckeye Steel Castings Co.,** with headquarters at 80 E. Jackson Blvd., Chicago.

Effective Feb. 27 the New York office of **Waugh Equipment Co.** and **Hydra-Cushion, Inc.,** will be at 230 Park Avenue, New York.

Charles C. Jarchow, chairman of the board, **American Steel Foundries,** has retired. Mr. Jarchow will continue as a director and the vacancy created by his retirement will not be filled. **Marion J. Allen,** director of the personnel and public relations division, elected vice president.

Robert D. O'Brien, executive vice president of **Pacific Car & Foundry,** Seattle, Wash., has been elected president, succeeding the late **Paul Pigott,** (RA, Feb. 13, p. 47).

OBITUARY

John E. Dixon, 83, who retired in 1950 as president of the **Baldwin-Lima-Hamilton Corp.,** died in Moore Memorial Hospital, Pinehurst, N. C., Feb. 26 after a short illness.

William McL. Pomeroy, 73, who retired in July 1955 as general traffic manager of the **Pennsylvania** at Philadelphia, died of a heart attack Feb. 25 at his home in Haverford, Pa.

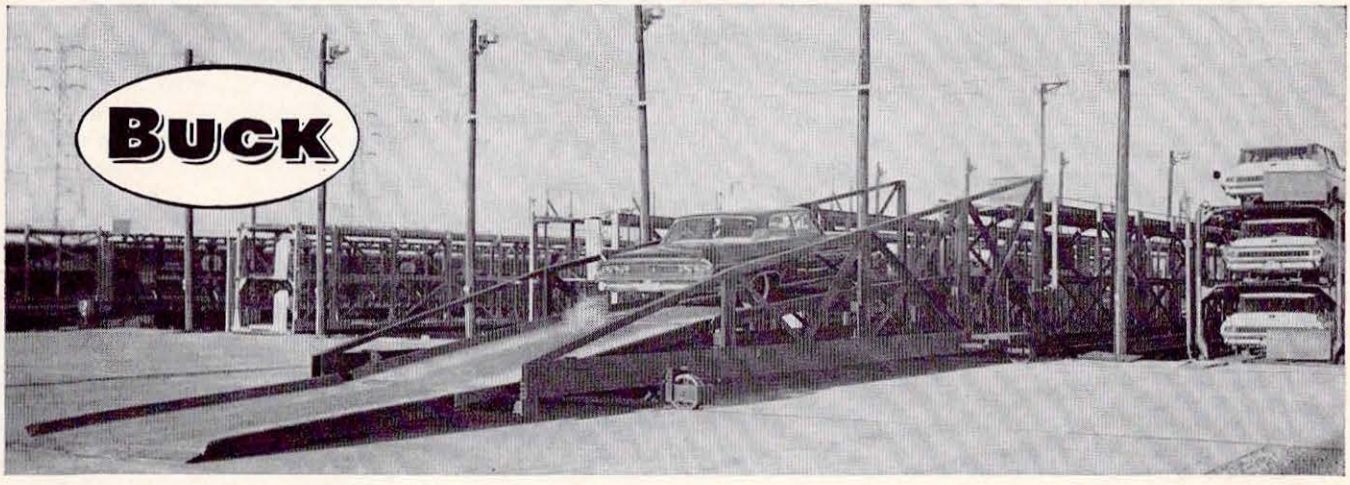
William Kohler, 74, retired secretary and treasurer of the **Jersey Central,** died Feb. 24 at his home in Philadelphia, Pa.

H. H. Talboys, vice president, Railway Equipment Division, **Nordberg Manufacturing Co.,** died on Feb. 5, following a brief illness.

H. P. Henshaw, 74, who retired in 1951 as vice president of the **Chesapeake & Ohio,** died Feb. 4 at Huntington, W. Va.

William A. Hotzfield, executive vice president, **Minneapolis, Northfield & Southern,** died Feb. 21.

Arnold G. Peterson, 58, service engineer, **W. H. Miner, Inc.,** died Feb. 23 at Chicago.



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You Ought To Know...

Prices paid by railroads for fuel, materials and supplies continue to rise. The AAR's latest quarterly index, for January, is 144.4—up nearly a point from October 1960's 143.5. Last year, too, started out with the index at 144.4. It then fell to July's 142.7, after which the present uptrend got under way. The index is based on mid-year spot prices of the 1947-49 period as 100.

Higher fuel prices accounted for the October-to-January rise, as they had for the increase recorded for the previous quarter. The fuel-price index rose from 114.3 to 117.0. Other product indexes were down, except for a less-than-one-point rise in the index covering prices of iron and steel products.

Big trucks will pay a larger share of highway costs if Congress adopts President Kennedy's recommendations for keeping the federal highway program financed by user payments. The President would increase the annual license fee on trucks over 26,000 lb from $1.50 to $5.00 per 1,000 lb, increase the diesel fuel tax from four cents per gallon to seven cents, raise the taxes on tires, innertubes and retreading rubber, and retain at four cents per gallon the federal gasoline tax which is scheduled to drop to three cents July 1. The President said studies show that improved highways benefit operators of big trucks "many times as much as the average automobile driver."

A series of voluntary educational sessions for Soo Line employees began March 2 at the Minneapolis YMCA where company officers explained the significance of various Soo Line financial reports. A second meeting is scheduled for March 30 and will cover traffic activities and ways in which employees can help expand company revenues.

Preparing for an upturn in the chemical and building industries, as well as a resumption of lake coal shipping, C&O has stepped up its heavy car repair programs for hoppers. Repairs to 1,000 hoppers at the rate of 10 a day began in February. In addition, C&O is turning out 36 coal cars a day on lighter repair production lines at Russell, Ky. The road has recalled 310 workers for these programs.

A joint rail-highway economic study "to determine where each [mode] can operate most efficiently and in the best interests of the shipping public" was proposed by Maine Central President E. Spencer Miller last week. He said that if voluntary integration can't be achieved, railroads "should be empowered by legislation to create by themselves the supplemental highway transportation which the public is crying for and so desperately needs."

Use of aluminum in containers will increase 25-fold in the next decade, predicts Aluminum Company of America. By 1970, Alcoa predicts, containers will be consuming 185 million pounds of aluminum annually, compared with the present rate of 7,000,000 pounds a year. The company estimates that 97% of the 15,000 domestically-built containers now in use are constructed of aluminum.

Effective traffic management "will become increasingly important in the years to come," Charles H. Sturgeon, general traffic manager of B. F. Goodrich Co., told a joint meeting of the Akron (Ohio) Traffic Club and the Akron Chapter of Delta Nu Alpha. He predicted that "the difference between profit and loss for many companies will be in unrelenting control of freight costs and services."

Location of 236 new or enlarged manufacturing plants and warehouses along the Norfolk & Western in 1960 brought the road an estimated 24,000 additional cars of freight annually, says President S. T. Saunders. N&W spent $1,000,000 for industrial development last year.

Broad-scale federal research to evaluate new advances in mass-transit technology was advocated by Senator Harrison A. Williams (D.-N. J.) in a speech in Congress last week. He said there's a need for "short-range emergency action to preserve existing service" and "a sound long-range program for the improvement of mass transportation as a means of meeting our total urban transportation needs, which nearly everyone recognizes cannot be met entirely by highways alone."

"Tomorrow's Equipment Financing," a roundtable discussion moderated by C. L. Combes, editor of Railway Locomotives and Cars, will be a feature of a special conference on railroad operating economics to be held at Chicago's Knickerbocker Hotel March 27-28 by the Railway Systems and Management Association.

All in the Family

The 292-mile Ann Arbor is getting a new parent—but still within the Pennsylvania family. Wabash, sole owner of AA, will sell the road to Detroit, Toledo & Ironton for $3 million. Directors of both roads have approved the transaction, and application to the ICC will be made in the near future.

Agreement on sale of the Ann Arbor comes as a prelude to the filing of an application to consolidate Norfolk & Western, Nickel Plate and Wabash via an N&W-NKP merger and lease of the Wabash. Indications are this application will be filed in March.

Ann Arbor, primarily a bridge carrier, links Toledo, Ohio, with Frankfort, Mich., and (by car ferry across Lake Michigan) with the port cities of Manistique and Menominee, Mich., and Manitowoc and Kewaunee, Wis. DT&I operates 464 miles of road between the Ohio River and the Great Lakes.

Slightly more than 99% of Wabash common stock and about 62% of the preferred is owned by the Pennsylvania. DT&I capital stock is owned 81.52% by PRR and 18.47% by Wabash. Pennsylvania's interest in N&W common (since the Virginian merger) is approximately 33%.

S-T-R-E-T-C-H

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By Using

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Our contract arrangement for these services obviates the necessity for any capital investment on the part of the Railroads and protects them as to cost for this type of work.

We have been servicing the Railroads continuously for over 45 years and have yet to lose a customer.

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RPI MEMBER

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Required for well established Car Shop in Chicago area. Excellent opportunity for right man. Furnish full record of experience with application. All applications held confidential. Box 948 Railway Age, 30 Church Street, New York 7, N. Y.

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Railroad tokens — passes from obsolete railways. Passes must be metal, plastic, or paper. *No Tickets Wanted.* Employees tokens also wanted. Wayside Transit Token Exchange, Inc., Box 415, Hagerstown, Md.

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Experienced railroad Construction Superintendent capable of supervising and managing multi-phase construction operations in a wide geographic area. Graduate civil engineer. Age 35-45. Salary open. Send complete resume of qualifications. Box 950, RAILWAY AGE, 30 Church Street, New York 7, N. Y.

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Experienced man for Railway Supply concern, middle west, for sales of major devices. Age preferred: 30 to 40, with B.S. in Mechanical Engineering or related subjects. Railroad or Carbuilder experience desirable. Box 2027, Railway Age, 79 West Monroe Street, Chicago 3, Illinois.

POSITION WANTED

Sales Manager Representative, 12 years experience successfully contacting Mechanical, Purchasing and Engineering Depts. All eastern railroads. Interested securing responsible position with large industrial concern supplying transportation accounts. Box 939, RAILWAY AGE, 30 Church Street, New York 7, N. Y.

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Needs an office man for frog, switch and forge plant capable of estimating jobs, keep cost and time records. Engineering and accounting aptitude. Airmail reply giving particulars about yourself such as training, schooling, experience and last three employers, marital status, age and salary expected. Attention Mr. L. L. S. Nelson, Nelson Iron Works, Inc., 45 Spokane Street, Seattle 4, Washington.

KEEP BUYING U.S. BONDS

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A 32 page booklet, "Meters and Test Equipment" covers such subjects as Basic Meter Movements, Ammeters, Voltmeters, Insulation Testers, Decibel Measurements, Oscilloscopes, and the West Test Set. A brief test of the material covered is included. The booklet is designed to give the signal and communications maintainer or helper valuable information on his most important tool—his test equipment. Available at 50 cents each from

Robert W. McKnight, Editor
Railway Signaling and Communications
Dept. RA, 30 Church Street, New York 7, N. Y.

90-1 Odds Are Too Big

Alongside appears, in part, a newspaper advertisement by a respected financial statistical service. It advises investors, in substance, to withdraw their investments from industries with high labor costs—and to put them, instead, into companies whose operations are being "automated."

No industry can keep its service up-to-date—and, thus, hold onto its customers—if investors are not willing to entrust their savings to it.

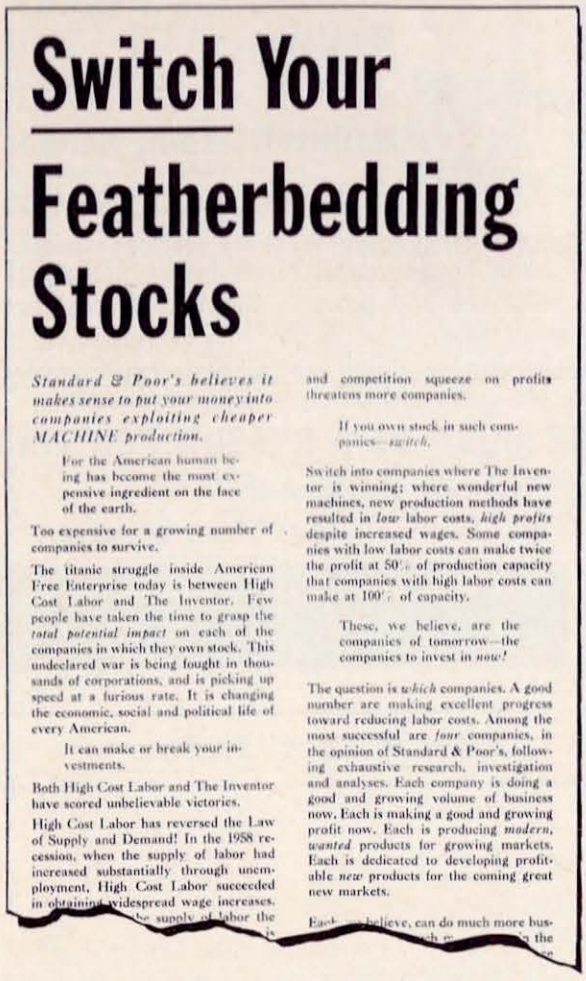
Loss of investors' confidence is particularly injurious to railroads because *the railroads' competitors get most of their investment money (in highways, waterways, airports) from the government.* In other words, the rivals of the railroads get plenty of investment money, whether private investors support them or not—while railroads do not get a cent of investment money except from private sources.

In the Doyle report to the Senate Committee on Interstate Commerce, page 55, railroad capital expenditures are tabulated for each year 1922-59. In terms of dollars of constant value, railroad capital investments averaged only $428 million annually in the years 1957-59, compared with $794 million in the mid-twenties (1925-27)—a decline of 46%.

If the comparison were made solely as to roadway and structures (the kind of expenditure the government makes in behalf of the railroads' competitors), the decline in investment in railroad property has been even more drastic and dangerous. In actual dollars, 1959 railroad investment in roadway and structures was only $250 million—less than half the 1929 outlay of $532 million, and 1929 dollars bought 2-1/3 times as much as 1959 dollars did.

While investment in railroad property has been suffering this catastrophic shrinkage, government expenditures on highways, waterways and air transport facilities have taken off into outer space. Federal outlays alone—for facilities for the railroads' competitors—in 1959 are tabulated in the Doyle report at $22.7 billion—or more than 90 times the depressed railroad investment of $250 million in roadway and structures in the same year.

It just isn't possible to keep railroad property and service modern and competitively attractive and efficient—while such an enormous gap exists between expenditures for railroad improvement, and government outlays to improve the attractiveness and efficiency of other transportation.



Switch Your Featherbedding Stocks

Standard & Poor's believes it makes sense to put your money into companies exploiting cheaper MACHINE production.

For the American human being has become the most expensive ingredient on the face of the earth.

Too expensive for a growing number of companies to survive.

The titanic struggle inside American Free Enterprise today is between High Cost Labor and The Inventor. Few people have taken the time to grasp the *total potential impact* on each of the companies in which they own stock. This undeclared war is being fought in thousands of corporations, and is picking up speed at a furious rate. It is changing the economic, social and political life of every American.

It can make or break your investments.

Both High Cost Labor and The Inventor have scored unbelievable victories.

High Cost Labor has reversed the Law of Supply and Demand! In the 1958 recession, when the supply of labor had increased substantially through unemployment, High Cost Labor succeeded in obtaining widespread wage increases. [illegible] the supply of labor the [illegible] and competition squeeze on profits threatens more companies.

If you own stock in such companies—*switch.*

Switch into companies where The Inventor is winning; where wonderful new machines, new production methods have resulted in *low* labor costs, *high profits* despite increased wages. Some companies with low labor costs can make twice the profit at 50% of production capacity that companies with high labor costs can make at 100% of capacity.

These, we believe, are the companies of tomorrow—the companies to invest in *now!*

The question is *which* companies. A good number are making excellent progress toward reducing labor costs. Among the most successful are *four* companies, in the opinion of Standard & Poor's, following exhaustive research, investigation and analyses. Each company is doing a good and growing volume of business now. Each is making a good and growing profit now. Each is producing *modern, wanted* products for growing markets. Each is dedicated to developing profitable *new* products for the coming great new markets.

Each [illegible] believe, can do much more business [illegible] the [illegible]

●

There is nothing inherent in railroading that makes it a high-labor-cost industry. On the contrary, railroads are by nature a mass-production business. Union cooperation, to improve output per man-hour—and some restraint on government's extravagant favors to other forms of transportation—could speedily restore the railroads' attractiveness to investors. This would improve the quality and economy of railroad service; and make railroads once more a "growth industry," with rising employment.

There's nothing wrong with railroads that would not be quickly corrected if those in authority, who know the right answers, would summon up the willpower and statesmanship to apply them.

AFTER 50 YEARS UNDERGROUND...

MADE IN 1904—still in prime condition. This unretouched photo of an Okonite multi-conductor signal cable that saw duty for more than half a century in the New York subway system shows the insulation is still flexible and resilient.

Okonite signal cable still tests above specifications

This is CABLE'BILITY

Cable'bility (cā'ble·bil'·i·ty) *new word. Noun.* **1.** Ability to design and manufacture electrical cables that give outstanding performance. **2.** Having long background and wide experience in cable research and application. **3.** Possessing keen understanding of customers' problems. Implies eagerness to serve faithfully and dedication to progress. **Syn.** The Okonite Company.

In 1904, a 13-conductor Okonite signal cable was installed in New York's subway system. For more than half-a-century, it saw round-the-clock service in America's busiest railroad. During a changeover, a section of the cable was removed for examination. Tests showed it had retained its excellent electrical characteristics.

The detailed laboratory report stated that "the rubber insulation was flexible and showed remarkable resilience." The coverings, too, were intact. The sample withstood a 5000-volt a-c potential for 5 minutes, compared to original specified value of 3500 volts. Insulation resistance was over 11,000 megohms, higher than for most types of new cable.

Today—as in 1904—Okonite continues to produce cables of unsurpassed reliability. The reason, of course, is Cable'bility. The Okonite Company, Subsidiary of Kennecott Copper Corporation, Passaic, N. J.

Diesel Designers and Engineers: Okonite has just issued a new bulletin—RA2149—on DEL wire and cable. Send for your free copy.

***where there's electrical power... there's* OKONITE CABLE**

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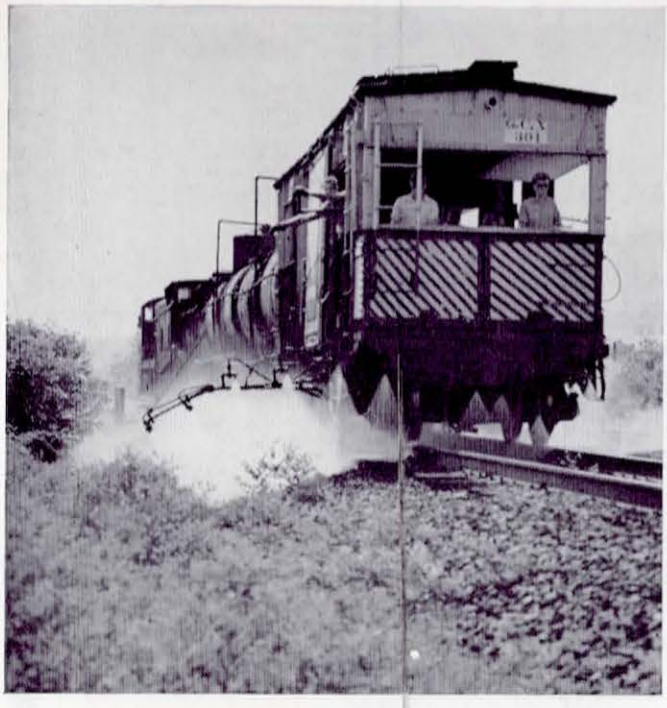
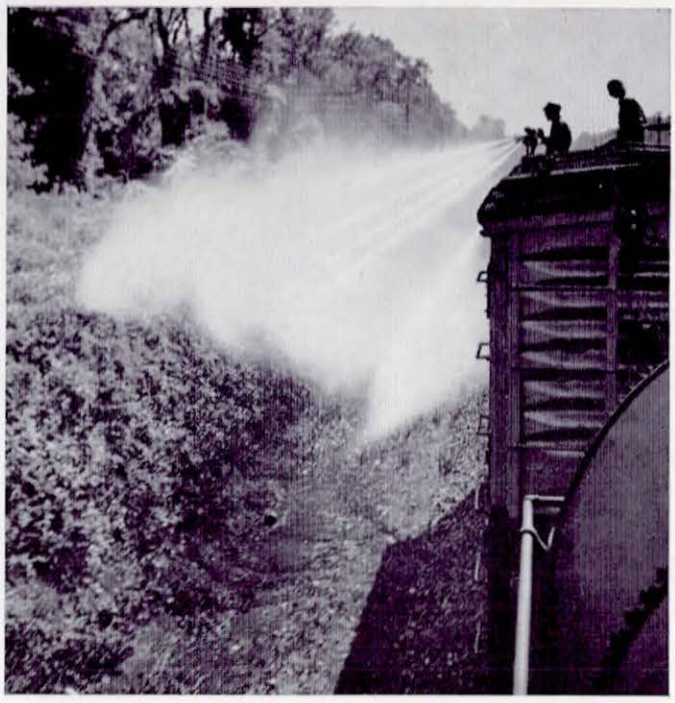


New liquid **UROX**® gives 8 to 18 months control of weeds and brush!



New liquid **URAB*** knocks out roots of brush, briars and weed trees!

General Chemical presents UROX and URAB—revolutionary new herbicides that enable you to control both weeds and deep-rooted brush faster, longer and more economically than ever before.

New liquid UROX is the first liquid substituted urea-type herbicide developed for railroads. It's fast-acting . . . burns back annual and perennial grasses as well as broadleaved weeds within 12 hours after application, regardless of weather. It's long-lasting . . . just one application wipes out weeds for 8 to 18 months. Effects are cumulative, too! Control can be continued economically year after year with small "booster" doses.

New liquid URAB—the *bulldozer* of weed killers—is an exclusive development of General Chemical. Unlike other herbicides, URAB is soluble in water, giving it a unique ballast and soil-penetrating action that enables it to reach and kill the roots of tough, deep-rooted brush, briars, and weed trees.

UROX and URAB weed killers are ideal for railroad spray trains. They won't settle out . . . don't need continuous agitation . . . won't clog spray nozzles. Liquid UROX can be mixed with fuel oil, diesel oil or ordinary weed oils. Liquid URAB is completely soluble in oils *or* water. Both are available in granular form, too, for controlling weeds and brush in railroad yards, on spurs and sidings, around storage depots and other railroad installations.

For complete information on revolutionary, new UROX and URAB weed killers, phone or write the nearest General Chemical office.

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